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ABSTRACT

This document consists of articles which have been selected to provide insight into different aspects of the relationship between the two most pressing and challenging issues of the current time. The first is the need to achieve a just level of economic development for two-thirds of the world's population that live in poverty. The second is the economic, social, and moral imperative to achieve global disarmament. The attempt in selecting the articles was not to provide a new or original conceptualization of disarmament and development. Rather, the attempt is to present a broad range of the more provocative ideas that have been advanced to date, highlighting the main sources of current information and identifying those organizations whose work and research are providing a strong base for further work on crucial issues. The papers are organized under these headings: introduction (part of the Brandt Commission report which describes the crippling effects that arms spending has on economic development); military spending and its socio-economic consequences; arms trade and production; the military economy and conversion to civilian production; plant closings and conversion; and conclusion (which examines economic conversion and offers suggestions to the questions left open by the Brandt Commission's introduction). (JN)

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MAKING THE CONNECTION

Disarmament Development and Economic Conversion

A READER

SE 046 010

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MAKING THE CONNECTION

Disarmament, Development and Economic Conversion

A Reader

This publication was compiled and edited by Howard Gold,
Consultant to the Non-Governmental Liaison Service, New York

January 1985

85-43212

The views in the Reader are those of the authors and do not necessarily represent the views and policies of the United Nations or related agencies.

PREFACE

A Word About the Reader

Each article in the Reader has been selected to provide insight into a different aspect of the relationship between the two most pressing and challenging issues of our time. The first is the need to achieve a just level of economic development for two-thirds of the world's population that live in poverty. The second is the economic, social and moral imperative to achieve global disarmament.

With these selections we are not attempting to provide a new or original conceptualization of disarmament and development. Rather, we are attempting to present a broad range of the more provocative ideas that have been advanced to date, highlighting the main sources of current information and identifying those organizations whose work and research are providing a strong base for further work on these crucial issues.

The Reader includes papers on the relationship between development and disarmament, the social and economic consequences of military spending, the international economy and the politics of arms trading, military production and the "war economy", conversion from military to civilian economy and the restructuring of civilian industries.

The Introduction and Concluding Section are most inclusive in discussing the interrelated issues of disarmament, development and economic conversion together. In the Introduction, the Brandt Commission eloquently describes the crippling effects that arms spending has on the process of economic development. In the Concluding Section there are two articles, "From Military to Civilian Economy: Issues and Options" by Seymour Melman, and Chapter thirteen of "In Pursuit of Disarmament" by Inga Thorsson. Melman's paper remains a classic in the literature on economic conversion. Melman provides solid and well researched suggestions to the questions left open by the Brandt Commission's introduction.

Sweden is the first country to respond thus far, to the recommendations of the General Assembly to follow up on the UN Study on Disarmament and Development, which encouraged member governments to examine possibilities for disarmament on a national level. We have included the Appraisals and Recommendations from Inga Thorsson's latest study for the Swedish Government. The full report stands as the most forward looking appraisal on disarmament and economic conversion by a government.

The material in between is more specific. We have included descriptions of these articles at the beginning of each section.

To supplement these more theoretical contributions and to provide references and tools for action, an accompanying Resource Guide has been prepared.

It is the initiatives of citizens, broadly represented by non-governmental organizations (NGOs) and activist movements, that have raised the important questions about militarism, the arms race and economic development. The amount of the work being done on these issues has grown rapidly since 1980. We hope that this education guide can help these groups and individuals to be more effective in their work.

Howard Gold
Editor

ACKNOWLEDGEMENTS

A publication such as this education guide could not be possible without the advice, suggestions, and help of many individuals. Barbara Adams, Steve Meacham and Swadesh Rana were very helpful during the early discussions on the outline the project would take.

In researching articles, organizations and citations to be incorporated in the Reader and the Resource Guide, Louise Bruyn, Richard Burns, Lloyd Dumas, Gary Gamer, David Gold, William Hartung, Michael Klare, David McFadden, Paul Murphy and Ann Schultz, made important contributions.

NGLS (N.Y.) staff and interns, Chester Anie, Kevin Cassidy, Maria McGuff and Corinna Sulit worked through the many revisions and drafts which the publication required.

Financial support for the Project came from the Government of Sweden through the U.N. Division for Economic and Social Information. The U.N. Department for Disarmament Affairs provided the third inclusion for the kit, the list of U.N. resources on disarmament issues.

Special thanks to NGLS (N.Y.) intern Kirk Lilley, whose tireless effort in the final production stage of this publication assured its completion.

Michael McCoy
Senior Programme Officer
Non-Governmental Liaison Service

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I. INTRODUCTION

Disarmament and Development
- the Brandt Commission

This selection from the Report of the Brandt Commission was chosen as the introduction for the Reader because of its brief comprehensive overview of the issues that are raised in more detail in the subsequent sections.

The call for a "New Concept of Security" at the end of the article is interesting and deserves greater attention, but might be difficult to pursue in the present international political climate. It is interesting to note the bold suggestions of politicians out of power, in contrast to their caution during their governing years.

DISARMAMENT AND DEVELOPMENT

(Edited and adapted from) "Disarmament and Development," Chapter 7 in North-South: A Programme for Survival (Report of the Brandt Commission, Cambridge, MA: The MIT Press, 1980.

Recent developments have made the world more aware that the arms race has become a grave danger to the whole of mankind. The armaments of the superpowers and their alliances represent a precarious kind of balance which, given present political conditions, contributes to preserving world peace. At the same time they represent a continuing threat of nuclear annihilation and a huge waste of resources which should be deployed for peaceful development. The build-up of arms in large parts of the Third World itself causes growing instability and undermines development. A new understanding of defense and security policies is indispensable. Public opinion must be better informed of the burden and waste of the arms race, of the damage it does to our economies, and of the greater importance of other measures which it deprives of resources. More arms do not make mankind safer, only poorer.

The world's military spending dwarfs any spending on development. Total military expenditures are approaching $800 billion a year, of which over half is spent by the Soviet Union and the United States, while annual spending on official development aid is less than $40 billion.[1] If only a fraction of the money, manpower, and research presently devoted to military uses were diverted to development, the future prospects of the Third World would look entirely different.

In any case, there is a moral link between the vast spending on arms and the disgracefully low spending on measures to remove hunger and ill-health in the Third World. The 13-year (1967-1979) intensified eradication programme of the World Health Organization to abolish smallpox cost just over $300 million - which represents less than one two-thousandth of the world's annual military spending.[2] The cost of a ten-year programme to provide for essential food and health needs in developing countries is less than half of one year's military spending. Moreover, arms production is not just a matter of spending but of manpower and skills. It is profoundly disturbing to realize that in East and West a very large proportion of scientists and much of the scientific resources of universities and industry are devoted to armaments.

The obstacles to reversing these trends are formidable, but they should not be allowed to get in the way of serious discussion of the dangers of the arms race and the realization of the size of the economic burden that it involves. One of the chief enemies of disarmament is the sense of resignation and traditional acceptance that accompanies large defense spending, while the dangers are constantly mounting.

The public therefore must be made more aware of the terrible danger to world stability caused by the arms race, of the burden it imposes on national economies, and of the resources it diverts from peaceful development.[3]

Arms Sales to the Third World

While the prevention of nuclear war remains the first ambition of disarmament, 'conventional' (non-nuclear) weapons account for about 88 percent of all arms spending.[4] In fact, all the wars since the Second World War have been fought with conventional weapons. In the Third World, 'conventional' weapons have killed more than ten million people.

The North's sales of conventional weapons to the South are increasing (although the rate of growth has slowed in recent years). These represent about 63 percent of all arms exports.[5] But this trade is one between a few suppliers and a few receivers. According to the 1984 Yearbook of the Stockholm International Peace Research Institute (SIPRI), imports of the Third World from 1979-83 (in 1975 US dollars) were $47.1 billion, of which seven countries (Syria, Libya, Iraq, Egypt, Saudi Arabia, India and Iraq) account for $25.8 billion, the Middle Eastern countries alone accounting for almost 50 percent.[6] Some Third World countries, with Brazil in the lead, are now developing significant arms production capacity and are starting to export arms as well. But 67.5 percent of the arms imports to the Third World (for the period 1979-83) came from the U.S.A. ($13 billion) and the USSR ($18.8 billion), with France ($5.2 billion), Italy ($2.3 billion), and the United Kingdom ($2.2 billion) the other leading suppliers.[7] As the export of sophisticated arms is accompanied by an export of military-technical instructors, this can aggravate existing tensions.

The major powers sell weapons mainly to suit their own foreign policy or to maintain regional balances, rather than to benefit their economies. Smaller countries, for their part, use arms exports to subsidize their own military production, to provide employment in their own arms factories, and to assist their own economies. Arms exports from industrialized countries are now largely controlled by governments; such exports have nonetheless been increasingly subject to commercial pressures. The United States established its own government arms sales organization in 1961, which was followed by the other arms-producing powers. Where countries imposed export restrictions, these regulations were bypassed through the exports of factories or know-how for military purposes.

Restraining Arms Exports

With the recession in the arms industry in the early 1970s - following the end of the Vietnam War - and the emergence of new profitable markets, particularly in the Middle East, the drive to sell weapons to the Third World was intensified, often aimed at stimulating new demand irrespective of defense needs. These military-industrial pressures in the North are often reinforced by and connected with contacts in the developing countries, many of which have military governments or strong military elites who want to be equipped with modern weaponry to enhance their prestige. Arms exports by Eastern Europe too have been influenced by the availability of surplus weapons and the need to earn foreign currency.

There should be restraints on the commercial pressures for arms purchases exerted by the North - both West and East. This is unlikely to be achieved without agreement between the arms-producing countries. The traditional justification - "if we don't sell them someone else will" - cannot be accepted. In recent years the major powers have become more seriously concerned about the consequences of their arms transfers, and

expectation that agreement could be reached over regions such as Latin America, where the issues seemed relatively simple. But the talks broke down over questions of supplying arms to other regions. This setback should not be allowed to discourage further attempts to limit conventional arms exports on a non-discriminatory basis. Some restraint might be achieved by the western powers alone, at least in relation to major arms importing countries, in the competition among themselves to sell weaponry to the Third World. But the whole international community should increase the effort to reach agreement to restrain delivery of arms or arms-producing facilities to areas of conflict and tension; the major powers bear special responsibility in this. We also believe there should be disclosure of all arms exports and the export of arms-producing facilities. But this will not be an easy task and would require global agreements.

The governments of developing countries, like any others, want weapons to strengthen their national security; but they must share the responsibility for restraint. Some of them have increased their military expenditure at a rate that bears little relationship to their security needs, at the expense of peaceful development. As massive arms imports require an adequate infrastructure, absorb scarce skilled labor and additional foreign exchange for maintenance of imports, this all increases debt burdens. To reverse this trend will involve new priorities by developing countries and their leaders.

Disarming for Peace and Development

The problem is to reduce the demand for weapons so that resources for development can be captured before they become armaments. But we make no simplistic assumption that what could be saved by limiting military expenditure could be easily diverted into development assistance. New economic and political priorities are also required.

An argument often heard (and as often overestimated) is that arms production and exports are essential to the North's economies and employment. This is a fallacy. While it is true that the arms industries have been a source of growth and jobs, they are certainly not irreplaceable. Conversion to civilian production could be achieved faster than is often assumed because the economic problems are easier to tackle than the political ones. There is no reason to doubt that much of the capital and manpower presently employed in arms production or other military uses can be converted into producing peaceful equipment essential to development, including capital goods, as much research has shown.

All over the world, and even in the North, there are large unmet needs in health and transport or urban renewal which could expand to reduce any demand gap caused by reductions in arms production. If people paid lower taxes - and on a world average one tax dollar out of six goes into military expenditures - they would not be at a loss for other goods on which to spend their money. There are also many areas of research and global cooperation more valuable to humanity, more likely to ensure its survival, than

the improvements of the machinery of destruction to which so much of our resources is now devoted. But the fundamental need - from the world development standpoint - is for the industrialized countries to direct themselves toward peaceful high technology production, which could make use of the highly skilled manpower currently employed in arms industries.

A New Concept of Security

An important task of constructive international policy will have to consist in providing a new, more comprehensive understanding of "security" which would be less restricted to the purely military aspects. In the global context, true security cannot be achieved by a mounting build-up of weapons - defense in the narrow sense - but only by providing basic conditions for peaceful relations between nations, and solving not only the military but also the non-military problems which threaten them. The arms race, in which each participant acts in the name of national security - too limited a view of national security - has produced a situation in which the extinction of mankind is a real possibility. The goal of building a globally respected peace-keeping mechanism, powerful enough to prevent conflicts from turning into warfare, should be kept constantly in mind. A strengthened role for the United Nations in securing the integrity of states should result in the reduction of national military expenditures, thus freeing resources for more constructive purposes, including development assistance.

Our survival depends not only on military balance, but on global cooperation to ensure a sustainable biological environment, and sustainable prosperity based on equitable shared resources. Much of the insecurity in the world is connected with the divisions between rich and poor countries - grave injustice and mass starvation causing additional instability. Yet the research and the funds which could help to put an end to poverty and hunger are now pre-empted by military uses. The threatening arsenals grow, and spending on other purposes which could make them less necessary is neglected. If military expenditures can be controlled and some of the savings related to development, the world's security can be increased, and the mass of mankind currently excluded from a decent life can have a brighter future.

NOTES

(Footnotes indicate changes from the original text - primarily citing current information.)

[1] World Armaments and Disarmament SIPRI Yearbook 1984, (London and Philadelphia: Taylor & Francis, Ltd., 1984), p. 64, and, Ruth Leger Sivard, World Military and Social Expenditures 1982. (Leesburg, Virginia: World Priorities, 1982). p.20.

[2]"Smallpox is Dead!", World Health (The magazine of the World Health Organization), May 1980, pp. 5, 18. More specifically, the cost of eradication was $313 million, according to the WHO Liaison Office with the United Nations, Public Information Office.

[3]This followed as a recommendation concluding the original chapter, placed here for emphasis; "therefore" added.

[4]Randall Forsberg, "A Nuclear Freeze and a Non-Interventionary Policy." (Brookline, Mass.: Institute for Defense and Disarmament Studies, 1982.)

[5]SIPRI Yearbook 1984, pp. 177, 178 (calculated using Table 7.1).

[6]SIPRI Yearbook 1984, pp. 179, 180 (calculated using Table 7.2).

[7]SIPRI Yearbook 1984, pp. 214, 215 (Table 7A.2).

II. MILITARY SPENDING AND ITS SOCIO-ECONOMIC CONSEQUENCES

Study on the Relationship Between Disarmament and Development
(extracts from Chapter VII)
- Inga Thorsson, et al.

Economic-Social Decline
- Ruth Leger Sivard

Military Spending: the Economic and Social Consequences
- Olaf Palme, et al.

The Hidden Costs of the Arms Race; The Myth of the "Man on Horseback"; Weapons Go Where the Money Is
- South Magazine

. . . . national security has developed into an elusive goal, defined in geopolitical, strategic or military terms, a goal in itself changing, but always military. It is clear in my mind, and I hope that many will agree that national security cannot be a goal in itself, least of all to maximize military strength. The purpose of security must be to secure the independence and soverignity of peoples, their freedom and their means to develop economically, socially and culturally, which defines exactly what I would like to call "development".

– *Inga Thorsson*

Swedish Under-Secretary of State
for Disarmament

Chair of the U.N. Group of Governmental
Experts on the Relationship between
Development and Disarmament

Besides the possibility of the death and destruction caused by armed conflict, the greatest tragedy of growing military spending is the waste of human, natural and financial resources. In "Study on Relationship Between Disarmament and Development", the U.N. Group of Governmental Experts chaired by Sweden's Inga Thorsson summarizes four years of research and study with recommendations to governments and the United Nations System. Ruth Sivard's article, "Economic and Social Decline", focuses on the effects of arms spending on four important economic indicators: inflation, unemployment, income inequality and social neglect.

"Military Spending: the Economic and Social Consequences", by Sweden's Prime Minister Olaf Palme, outlines additional strains on the economies of nations, such as the growing expenditures on military research and development and the modern day fetish of weapons "procurement". Finally, from the periodical South Magazine we have included three articles outlining the growing expenditures on military hardware in Asia, Africa and Latin America.

STUDY ON THE RELATIONSHIP BETWEEN DISARMAMENT AND DEVELOPMENT

(extracts from Chapter VII - Summary, Conclusions & Recommendations), "Study on the Relationship Between Disarmament and Development," from UN Document A/36/356 Annex, (The Thorsson Report), 1981.

This investigation suggests very strongly that the world can either continue to pursue the arms race with characteristic vigour or move consciously and with deliberate speed toward a more stable and balanced social and economic development within a more sustainable international economic and political order. It cannot do both. It must be acknowledged that the arms race and development are in a competitive relationship, particularly in terms of resources but also in the vital dimension of attitudes and perceptions. The main conclusion of this report is that an effective relationship between disarmament and development can and must be established.

Economic growth and development would, of course, take place even with a continuing arms race but it would be relatively slow and highly uneven geographically. The cooperative management of interdependence, on the other hand, can be demonstrated to be in the economic and security interests of all States. But the adoption or rather the evolution of such an outlook is quite improbable if the arms race and failures to observe the principles of the United Nations Charter continue

It would be virtually impossible to dispute the desirability of reversing the arms race in order to speed up the process of socio-economic development. But the very disappointing history of disarmament efforts on the one hand, and the less than satisfactory results so far in establishing a new international economic order on the other, have underlain the regrettable reluctance among some States to perceiving a disarmament-development relationship. Against this background, concrete measures within the framework of disarmament for development might have a psychological and political impact affecting positively the relations between developed and developing countries and thus international peace and security.

Several past studies on the relationship between disarmament and development, including a United Nations report on the subject in 1972[1] reflect a note of caution in projecting too close an association between them. In most cases, this cautious attitude reflects goals contingent upon each other which could somehow be seen to detract from the urgency of achieving fast progress in each separately. Most of these studies, therefore, were content with projecting the enormous contrasts between the magnitude of resources claimed by the world-wide military activites and the relatively modest outlays required to provide for the basic unmet needs of the poorer sections of society, particulary in the developing countries. The relationship between disarmament and development thus acquired a strong normative content on the basis of its desirability.

The developing countries are still in urgent need of greater allocations to meet the expanding demands of their growing populations. But the developed world is also beginning to confront the cumulative results of its past patterns of resource utilization. The market economies are facing serious socio-economic problems like unemployment and inflation. The centrally planned economies are also under considerable strain to make faster progress in achieving better consumer satisfaction and greater modernization in view of a slow-down in growth rates. For the world as a whole, the allocation of 5 to 6 percent of global output for military purposes is becoming a questionable proposition in a climate of sluggish economic growth performance for the 1980s, as compared to the more favorable economic performance in earlier decades.

Another worrisome development in the changed socio-economic context for this study, however, is the growing uncertainty in East-West relations spilling into the entire field of international economic relations. The danger of politico-strategic considerations influencing these relations is more real than ever before. It seems likely that progress in establishing a new international economic order will be adversely affected by the arms race, which not only claims resources but also influences the scope and content of international economic cooperation. To the extent that achievements in the international economic order are affected by the dynamics of the arms race, the relationship between disarmament and development involves more than a contrast between the resources claimed by military activities and the basic unmet needs of the poorer sections of society. Also the normative appeal to direct some of the armament-related resources into the development field acquires an element of self-interest if it can be demonstrated that the need for such a reallocation is shared by all social systems irrespective of their current levels of development.

A major objective of the present study, therefore, was to look beyond the strong normative and logical arguments to examine how the disarmament-development relationship might influence viable policy options of States, firmly rooted in their own enlightened national interest. The moral and rational appeal of the relationship is not questioned, but is reiterated. Moreover, the Group has been able to assemble substantial historical and empirical evidence for viewing it as an economic imperative.

The conceptual basis for this study is described in Chapter II, which defines the framework and scope of the relationship between disarmament and development. After examining the conventional exposition of the subject, in the light of recent development, the Group has placed the disarmament-development relationship in the context of a triangular interaction between disarmament, development and security.

As with the concept of security, the Group has also adopted a broad definition of development which, besides the need for sustained economic growth, would involve the opportunity and responsibility for full participation in the economic and social processes and a universal share in its benefits as a result of profound economic and social changes in society. In projecting development as a global requirement, the Group has outlined the dimensions of economic interdependence and contrasted the benefits of cooperative management with the potential threats inherent in continuing an attitude of preserving the status quo. Relying upon recent experiences to demonstrate that the economic fortunes - and thus the security - of all nations are interdependent and destined to become more so, the Group has argued that failure to bring the arms race under control is likely to be associated with a vicious circle of confrontation and mutual denial, with declining prospects for mutually advantageous economic cooperation and shrinking options for all nations. Developments in East-West detente and in the North-South dialogue in recent years illustrate this possibility.

The incompatibility between the objectives of a new international economic order and the recent trends in the arms race, already recognized by the General Assembly at its Tenth Special Session of the United Nations (resolution S-10/2), has been confirmed by the Group's findings on the spill-over effects of the arms race into the area of international economic relations. Drawing upon empirical evidence to substantiate this point, the Group's perception of the disarmament-development relationship suggests that its political recognition would, in the longer term, significantly expand the economic and social horizons of mankind. Adoption of policies reflecting this relationship should be viewed positively rather than negatively, not as an unfortunate and hazardous necessity but as one of those all too rare opportunities in which the relocation of resources results in a substantial increase in output, both in the sector relinquishing the resources and in the sector that gains these resources. The appalling dimensions of poverty, the threatening scarcities, the destruction of the environment and the resultant global economic malaise are problems largely of our own making. It is, in principle, well within our collective technological and intellectual capabilities and within the earth's carrying capacity to provide for the basic needs of the world's entire population and to make progress toward a more equitable economic order at a pace politically acceptable to all.

In sum, the Group's study has confirmed that the sustained arms race represents a critical, and still intensifying, challenge for mankind. The danger of war is currently growing, owing to the new dimensions assumed by armaments competition - quantitative and qualitative, conventional and nuclear - and to the use or threat of use of force by States in non-conformity with the principles of the United Nations Charter. The greatest danger to all mankind, and one that would put its very existence in jeopardy, is the risk of any conflict leading to the use of nuclear weapons. The need to prevent this risk is becoming all the more urgent. At the same time - and this is an aspect that the Group's investigation has led it to emphasize very strongly - the protracted arms race has entailed serious economic and social consequences for the people of all nations. Taken together, these considerations underline the extreme urgency of abandoning the use of force in international relations and taking concrete measures toward disarmament, under effective international control.

The magnitude of resources claimed by world-wide military activities are described in Chapter III. In it, the prevailing use for military purposes of labour. industrial capacity, raw materials and land is documented as comprehensively as possible.

The Group's calculations and projections about the use of raw materials for military purposes are made against the background of serious concern over the availability of adequate supplies of oil and minerals that is. non-renewable raw materials. While visualizing no immediate exhaustion of supplies till the end of the century, the Group foresees some difficulties in terms of dependable access to supplies of raw materials. Realizing that current projections of demand vis-a-vis known reserves are based largely on the historical pattern and growth of consumption, the Group feels that accelerated growth and industrialization in the developing countries could have a significant impact on their general validity. Very rough extrapolations based upon published estimates of the United States share in the consumption of a selected group of non-energy minerals for military purposes suggest that anything between 3 to 11 percent of 14 such minerals are utilized world-wide for military purposes. The use of petroleum for military purposes. including indirect consumption in military industry, has been estimated at 5 to 6 percent of total global consumption.

The available data on the land area used for military purposes is far too sketchy to permit reliable global estimates. While it is negligible as an absolute share of world-wide land utilization and vast areas of land in the world are of no more interest to the military than to other land users, the military use of land is not without consequence. Moreover, as an indication of trends, military requirements for land have risen steadily over the course of this century owing to increase in the size of standing armed forces and, more particularly, the rapid pace of technological advances in weaponry. Despite its small relative share in the use of land, the military can and often does compete directly with civilian demands, be they urban, industrial, agricultural, recreational or based on environmental concerns.

The world military R and D effort also has some characteristics which cannot be reflected in a statistical portrayal. In the first place, the technological arms race has complicated the process of political assessment and efforts to control the race through negotiation. Secondly, military R and D expenditure is even more highly concentrated than total R and D. While six countries account for about 85 percent of total R and D, just two countries account for a similar share of military R and D.

Since international trade in arms is not officially recorded in world trade statistics, no comprehensive and official body of data is available. Rough estimates, however, indicate that almost $26 billion is annually traded in the international traffic in arms. Besides the transfer of military hardware, arms transactions also involve large-scale training programmes and, for an extended interim period, technical personnel as part of a weapons deal. Crudely estimated, these (services) constitute approximately 15 percent of the current global value of the arms trade.

In Chapter IV, the Group examined a series of questions: Can a world faced with a universal slow-down of economic performance afford to continue the use of real resources for military purposes on the scale just summarized? Is it possible to demonstrate that the present socio-economic problems, are, to some extent, a cumulative result of the past patterns of military consumption? Will the multiplicity of costs conventionally associated with military outlays be less tolerable in the future than those perceived in the past? What are the direct and indirect benefits likely to follow the reversal of the present trends in the arms race? These and other related issues are addressed in that chapter, which analyses the socio-economic consequences of the arms race and implementation of disarmament measures.

The historical and empirical evidence analysed by the Group has made it take a position that military outlays, by definition, fall into the category of consumption and not investment. Consequently, steadily high or increasing military outlays are likely to have a depressing effect on economic growth, directly through displacement of investment and indirectly through constraints on productivity which itself depends to a considerable degree on the R and D effort currently biased in favour of military technology. The co-existence of high levels of military spending and high rates of economic growth in the past cannot be taken as evidence of a casual relationship between the two. The availability of unutilized and under-utilized resources among the less developed economies may produce short-term results suggesting a parallelism between high rates of growth and significant military spending. But in the long term, the totality of adverse socio-economic consequences of sizeable military outlays outweigh any immediate spin-offs.

In accordance with the explicit directives from the General Assembly, the Group has given special attention to the burden-measurement and opportunity costs of the arms race for the developing countries. Military outlays put unequal burdens on economies at different levels of national income, working thereby to the detriment of less developed economies. Also, their urgent need for an uninterrupted flow of external inputs like capital, finance, trade and technology makes the less developed economies susceptible to the effects of military outlays in the developed world, in addition to the burden of their own military spending. The developing countries are, thus, the worst affected victims of an adverse strategic environment dominated by the seemingly endless arms race among its major participants.

But policies pursued in implementing the disarmament development relationship to the benefit of the developing countries will also improve the universal economic prospects. The catalytic effect of strengthening the economic content of detente will by itself be a major dividend for East-West relations. Besides, an improved economic performance by the South will stimulate demand in the North and significantly improve its employment opportunities. Rough estimates about the global consequences of gradual reductions in military spending, proportionate to the magnitude of current military outlays among different countries, suggest that the diversion of a part of released resources to developing countries will (a) substantially improve the per capita GDP, industrial employment and capital stock for the developing countries; and (b) provide significant economic gains for all the regions in the world including the most developed.

The need to view the disarmament-development relationship in a dynamic economic environment has been further elaborated in Chapter V, which examines the technological feasibility and economic potentials of the process of conversion from military to civilian purposes. While recognizing the importance of the post-war conversion or reconversion experience, the Group has argued that the problem is now so influential and ingrained that preparing for its solution cannot be deferred until disarmament measures are agreed upon. The character of the military sector has changed dramatically over the post-war period and conversion of resources now used for military purposes will be qualitatively different from the demobilization exercises following past world conflagrations and military conflicts.

The world-wide defence industry is characterized by a high degree of geographical sectoral concentration. It also involves a considerable degree of specialization in its workforce and a very pronounced emphasis on research and development, particualry in economies with sophisticated military sectors. This apparent exclusiveness of the defence industry should not, however, prove to be an insurmountable problem because:

* Conversion and redeployment is not a phenomenon uniquely associated with disarmament. Any form of economic and social change represents a continuous process of conversion. Particularly in modern industrial economies, the factors of production must respond continuously to the development of new products and the phasing-out of old ones and to the introduction of new production techniques.

* A significant part of military demand is directed at goods and services that are essentially identical to those consumed in the civilian sector. In this case, the problem is a relatively minor one of ensuring that civilian demand fills the gap left by cutbacks in military spending. Primary responsibility for conversion, in an over-all sense, will inevitably fall on the central government, particularly in regard to initiating

preparations for such a process. The nature and extent of government involvement, following disarmament measures, in the process of conversion itself will vary from country to country, depending in large part on the type of economic system but also on many other factors.

A relatively major problem in preparing for conversion, however, pertains to resources unsuited for the production of civilian goods such as those involved in combat aircraft, missiles, warships, tanks and so on. The primary need here would be for advance consideration of how their capabilities can be altered to permit the smoothest possible transition to the production of socially useful goods and services. A commitment to preparing for conversion will be an investment in minimizing the problems of transition. Such a commitment would entail thinking through the problems likely to be encountered by workers, industries and communities in the event of reductions in military business and devising measures and arrangements to overcome or minimize them.

While advance preparations for conversion will go a long way in mitigating the displacement effects on personnel and industries, a diversion of the converted human and material resources into the less developed economies could provide an additional cushioning effect against any major economic disruption in the economies with high military spending. In this respect, prevailing and prospective economic conditions throughout the industrialized world are clearly not favourable. Their economic difficulties are to some extent symptoms, not merely of a temporary cyclical downturn, but of a more profound economic malaise. The saturation of major consumer markets and the emergence of serious supply-side constraints on economic growth—energy, raw materials, pollution and so on—all suggest the need for significant changes in the structure of industry, in the direction of future investment and in the pattern of consumer demand. The Group's argument about the transitional difficulties associated with conversion being lessened, if cast in a framework of international cooperation, is based upon growing evidence suggesting that the pattern of imports of capital goods by developing countries would coincide significantly with the productive capacities released by disarmament measures in the industrialised countries. More than one of the Group's case studies of disarmament and conversion have indicated that, when increased resource transfers to developing countries were factored in as one of the options for conversion, it was found that the transfer policy least disruptive for the converting economies involved goods and services closely matching the new emphasis in developing countries on providing basic needs and promoting self-reliance, that is, agricultural machinery, fishing technology, machinery for mining, manufacturing, construction and hydropower plants and equipment and personnel for education and health programmes.

Possible institutional arrangements for the transfer of additional resources released through disarmament measures to the developing countries are considered in Chapter VI which examines the various proposals made in the United Nations to that effect. In doing so, and in accordance with the mandate of the General Assembly, the Group gave particular consideration to the French proposal, made at the Tenth Special Session, for the establishment of an international disarmament fund for development. It is realized that the Second Disarmament Decade and the Third United Nations Development Decade are passing by without concrete achievements on either front, thus giving little scope for optimism. But in its examination of the technical feasiblility and political realism of a fund-type institutional link between disarmament and development, the Group's view was influenced by its general position that resources involve more than finances.

Three basic contributory principles are found in the various proposals for promoting the reallocation of financial resources from armaments to development:

* The armaments levy approach, in which national assessments for development contributions are based on some measure of States' allocation of resources for military purposes;

* Voluntary contributions on the model of numerous other United Nations organizations and Specialized Agencies;

* The disarmament dividend approach, in which the savings resulting from disarmament measures, or a portion thereof, are allocated to development needs.

In the context of a disarmament-development relationship, the Group considered a disarmament dividend approach as the most attractive among the three examined. This approach was also found implicit in the second phase of the French proposal, although the initial stage of its implementation relies mostly on an armament-levy type of approach. This attempt to combine a levy with a dividend certainly constitutes an important political initiative, but its full implications remain to be examined both on grounds of feasibility and acceptance by the major military spenders.

On the basis of its findings and conclusions, implicit in this entire report and more explicitly summarized above, the Group makes the following recommendations:

1. That all Governments, but particularly those of the major military Powers, should prepare assessments of the nature and magnitude of the short and long-term economic and social costs attributable to their military preparations so that their general public be informed of them.

2. That Governments urgently undertake studies to identify and to publicize the benefits that would be derived from the reallocations of military resources in a balanced and verifiable manner, to address economic and social problems at the national level and to contribute towards reducing the gap in income that currently divides the industrialized nations from the developing world and establishing a new international economic order.

3. A fuller and more systematic compilation and dissemination by Governments of data on the military use of human and material resources and military transfers.

4. That the disarmament-development perspective elaborated in this report be incorporated in a concrete and practical way in the ongoing activities of the United Nations system.

5. That Governments create the necessary prerequisites, including preparations and, where appropriate, planning, to facilitate the conversion of resources freed by disarmament measures to civilian purposes, especially to meet urgent, economic and social needs, in particular, in the developing countries.

6. That Governments consider making the results of experiences and preparations in their respective countries available by submitting reports from time to time to the General Assembly on possible solutions to conversion problems.

7. That further consideration be given to establishing an international disarmament fund for development and that the administrative and technical modalities of such a fund be further investigated by the United Nations with due regard to the capabilities of the agencies and institutions currently responsible for the international transfer of resources.

8. That the Secretary-General take appropriate action, through the existing inter-agency consultative mechanism of the Administrative Committee on Coordination, to foster and coordinate the incorporation of the disarmament and development perspective in the programmes and activities of the United Nations system.

9. That the Department of Public Information and other relevant United Nations organs and agencies, while continuing to emphasize the danger of war--particularly nuclear war--should give increased emphasis in their disarmament-related public information and education activities to the social and economic consequences of the arms race and to the corresponding benefits of disarmament.

The economic consequences of buying more weapons will be substantial. Job, investment, and economic growth absolutely will be sacrificed. Technological progress will be distorted, and social programs aimed at decreasing human suffering will be cut.

-William W. Winpisinger

President, International
Association of Machinists

ECONOMIC AND SOCIAL DECLINE

"Economic-Social Decline," by Ruth Leger Sivard. World Military and Social Expenditures 1982, pp. 18-21.

The consequences of an unchecked arms race extend far beyond the direct links previously discussed: the growing threat of nuclear catastrophe, the rising death toll in hostilities, and the militarization of political authority. Another victim is the world economy. And in its immediate and long term effects on human existence, this victim--barring nuclear war—may count as the most disastrous boomerang of all.

The military-economic connection must be seen in both developmental and welfare terms. In quiet, devious ways the military burden undermines the growth that is essential to sustain an increasing population. It slows civilian investment and productivity, stimulates inflation, widens the gap between rich and poor, and postpones the solution of overriding global problems which can be resolved only by all nations working in concert.

For those hundreds of millions of people living at the margin of existence, the military burden on society means unrelieved poverty and massive suffering. It condemns countless individuals to live out lives without hope, destitute of the most elementary needs. Like nuclear war, this too is genocidal.

In selecting for review four major features to today's troubled social condition, the summary following will also attempt to show their military connections. Because the economic effects of the arms race occur in hidden and roundabout ways, they are too often ignored in economic analysis. The purpose here is to bring them into better focus, not to deny the complex of influences of which they are one part.

Inflation

Stubborn price inflation is one of the most visible signs of a global economy in crisis. It is a pervasive, debilitating illness but uneven in its effects, bearing most heavily on the weakest members of society.

For over three years the world average of consumer prices has increased at an annual rate of 12-15 per cent. No national economies, even those over which there is strong centralized control, can be sealed off from a virulent global inflation. All suffer, although not in equal degree. The poorest countries are the hardest hit. According to the IMF price index, inflation in the non-oil developing countries is currently more than twice as rapid as in the industrialized countries.

Within nations, the effects are also uneven. Again it is the poorest and weakest elements of the population, and particularly the elderly with fixed incomes, who bear a disproportionate share of the inflation burden. They have no margin minimum requirements for food and shelter. For them runaway inflation can mean the sacrifice of needs basic to life itself.

Military spending is a silent partner in the inflationary spiral, stimulating it in several ways. It generates spendable income without enlarging the supply of goods available in the civilian market. It draws off capital from civilian investment, which in turn slows productivity gains and price economies. The result is a generalized upward pressure on prices.

Military procurement also has a more specific inflationary impact which derives from characteristics peculiar to it: rapid product change and obsolescence, cost-plus-profit contracts and the excessive waste endemic to large bureaucracies beyond public control. To ensure first claim on scarce materials, labor, management and scientific talent, military buyers operate under less price constraint than civilian buyers. Few economies can prevent this privileged demand from having a spillover effect in the rest of the market

Unemployment

The world economy is not able to provide jobs for its expanding work force. Rising unemployment has been a persistent problem, reflecting not only the sluggish growth of the most recent years but a longer-term serious weakness in the development process.

State of the World's People

While the military burden rises, the economic-social trend is toward further contraction, reflected in a slackening of economic activity and growing social distress.

The continued deterioration of the world economy follows several years of declining growth rates and accelerated inflation.

In human terms it means an increasing number of wasted lives:

600,000 000 people unemployed or less than fully employed
900,000,000 illiterate adults
500,000 000 people malnourished
1,000,000,000 living in poverty

A sample of 50 countries for which records are available since 1960 suggests that the number of unemployed may be three to four times higher that it was 20 years ago. Precisely how many at any one time are out of work we do not know. Rough estimates indicate that there are at least 600 million people who are unemployed, or under-employed in the sense of not having enough work to rise above the poverty level. These 600 million represent close to 10 percent of the labor force in the western industrialized countries but up to 50 percent in developing countries. The rate of youth unemployment is substantially higher than the average.

Numbers alone cannot convey the scope of the problem, nor the human tragedy it represents. For society as a whole it is an immense waste of potentially productive resources. Joblessness shows also in the frustration and alienation of a generation of young people, in rising crime rates, and in social unrest. It is a serious and growing threat to security of all nations.

Employment opportunities are linked to the availability of capital and the expansion of capital and the expansion of investment, a sustained growth in manufacturing, agriculture, and the service industries, and the training facilities needed especially for new entrants in the work force.

In all of these respects military expenditures are counterproductive. They have a negative impact on investment in civilian sectors; they divert research efforts to objectives that are not growth-producing; they train in skills largely unusable in the civilian economy. Studies in the US have shown that military expenditures create only half as many jobs as the equivalent amount of money spent on such basic needs of society as housing, roads, hospitals, schools. As an increasing number of developing countries have also found, defense spending is the least effective way to produce the job opportunities needed for rapidly growing populations.

Income Inequality

The economic growth of recent years has failed to narrow the enormous gap between the richest and poorest countries and between rich and poor within countries. A few developing countries have successfully moved out of poverty into a dynamic pattern of growth based in part on rapid industrialization. Some of the oil-producing states have soared to record levels of per capita income. The average gain in income in developing countries, however, has been too small in absolute terms, the growth of population too great, to begin to shrink the income gap.

Looking at how the growth of GNP between 1960 and 1980 was distributed among income groups of the population, we see that calculated in constant prices, the annual per capita income of the poorest fifth of the population advanced about $54; for the richest fifth, the gain averaged $4,224. The gap between the top and low income levels more than doubled in absolute terms over the period.

In the developing world in particular, income extremes within countries also appear to have spread. It is not uncommon for the richest fifth in the country to command 60 percent or more of the national income, while the poorest fifth of the population shares 2 to 5 percent of it.

The increased military presence in the Third World countries contributes to continued inequalities within countries. Military-dominated governments resist change and tend to maintain feudal structures. With the land-owning and business classes, they establish first claim on economic gains. As a consequence, the dividends of growth are slow to trickle down to landless peasants and the urban poor.

The arms race also re-enforces North-South inequalities. The impact of the rise in military expenditures has been relatively more severe in developing countries than in developed because of their much lower income base. Although the military burden relative to income has diminished somewhat in the last few years (and increased in the developed countries), the contrast between developed and developing in the income equivalents of their expenditures is still sharp. At 1980 levels of per capita income, military outlays represented 143 million man-years of income in developing countries and 50 million in developed.

Third World countries are also relatively more affected by the diversion of labor and management skills to military programs and to the advanced technology that increasingly goes with them. They have fewer trained people to spare. Military requirements drain away talent essential for development. They may also introduce at too early a stage the complex technology that can be paralyzing for young countries.

Development in the poorer areas of the world has been slowed by another casualty of the arms race, foreign economic aid programs. For most of the donor countries, economic aid takes a low priority in competition with military expenditures. In 1980, according to OECD estimates, net economic aid amounted to $36 billion. This was equivalent to about 8 percent of the military outlays of the donors. Both superpowers fell below this average. US aid was equal to about 6 percent of its military expenditures, Soviet aid to about 1 percent.

Social Neglect

Lurking behind the impersonal statistics of income disparity is a tragedy of human deprivation almost beyond comprehension. The number of people on this earth who live in extreme poverty reaches into the hundreds of millions. The total may now be as high as one billion--that is, 1,000,000,000 individuals who live under such abysmal conditions that they lack the most basic necessities of life. This is the ultimate immorality in a world able to lavish $600,000,000,000 in a single year on a military extravaganza.

Who are these terribly poor, the neglected members of world society, and where are they? Look around you. They can be found in the most developed countries in the world, eking out miserable lives in urban slums and rural backwaters. Areas of extreme poverty coexist with abundance. But most of the poorest, by far, are in the poorer countries. Perhaps one tenth of them in Latin America, northern Africa, and the Middle East; the bulk of them in Asia and in sub-Saharan Africa. Large numbers are concentrated in India, Bangladesh, and Indonesia. The majority of the poor are rural dwellers. About two in five are children.

The usual benchmark of poverty is minimal income, but other inequalities go with it and make clear why the cycle of underdevelopment is so hard to break out of. One-third of the world's population lives in countries where the average caloric intake is below FAO's estimate of daily requirements. The poor spend most of their income on food. Yet they live with daily hunger. Many are so malnourished that their ability to work is diminished. The malnutrition which restricts their productivity also weakens bodily resistance and sharply limits their life expectancy. Their children are susceptible to diseases that in richer settings are prevented by immunization. They have a much higher death rate in infancy, twenty times as high as babies born in families of upper incomes. Inadequately nourished, the children who survive in the world of poverty may grow up physically and mentally impaired. They are handicapped before they can become full members of society.

Illiteracy, like infant mortality, is disproportionately high among the poor. The great majority of adults are illiterate. Of their children who attend school, less than half complete more than a year or two at the primary level. They go into adulthood lacking the basic reading skills which could improve their productivity as farmers, or possibly help them to function in a newly industrialized economy.

Locked in the dehumanizing desolation of hunger and illiteracy, the dispossessed of today's world are beginning to break out. More and more of them are on the move, as refugees to foreign lands or to more promising areas of their own countries. By the millions they are fleeing to cities in search of jobs and food. Their slums spill into the urban centers where their presence is a constant reminder of the festering wound which society must heal if it wishes to survive.

How can it be done? How can the burden of poverty be lifted from the backs of one billion people? And what, if anything, does the world's military mania have to do with it? One obvious approach, as the World Bank and other development authorities have long pointed out, is to make more accesible the services essential to people's health and productivity: basic education, clean water, preventive medical care, public utilities and transport. However, these are normally the responsibilities of governments and they must be paid for out of public budgets--budgets which are presently overburdened with the cost of large armies and military hardware. Here is one place to begin.

Like the other problems mentioned above (inflation, unemployment, income inequality), social neglect also calls for corrective adjustments even more basic than the reordering of budget priorities. Needed are policies that will stimulate the civilian economy through growth-producing research and investment; that will provide a more equitable sharing of the benefits of growth; and that will encourage the concerted international action so essential in today's interdependent world. The policies associated with an intense arms race do not further any of these objectives; in fact. they are counterproductive to all of them.

The times call for a new global vision. One which is less diverted by exaggerated military fantasies and more attuned to the realities of human needs.

MAJOR MILITARY SPENDERS

And Their Economic-Social Standing Among All Countries

	Military Expenditures Cumulative 1960-1981		RANK AMONG 142 COUNTRIES, 1980											
			ECONOMIC-SOCIAL STANDING	GNP	Education					Health				
	Billion $	Rank	Avg. Rank	Per Capita	Public Expend per Capita	School-Age Population per Teacher	School-Age Population in School	% Women in Total Univ. Enroll.	Literacy Rate	Public Expend per Capita	Population per Physician	Population Per Hosp. Bed	Infant Mortality Rate	Life Expectancy
United States	1,820	1	9	16	16	7	1	12	1	13	26	34	19	8
Soviet Union	1,300	2	25	34	31	21	60	9	1	37	1	8	47	38
China	290	3	91	120	104	51	60	76	71	97	73	86	86	59
West Germany	239	4	6	8	12	21	34	62	1	2	12	11	19	13
France	224	5	4	12	13	10	24	12	1	7	29	8	9	8
United Kingdom	213	6	14	22	20	10	4	59	1	12	31	27	14	13
Saudi Arabia	93	7	54	11	11	57	112	86	123	39	61	102	100	89
Italy	82	8	21	27	27	10	60	32	27	16	2	20	22	13
Japan	77	9	20	23	18	31	6	103	1	18	38	12	1	1
Iran	60	10	71	55	34	76	86	70	99	51	75	109	96	77

Large military expenditures and social well-being seldom go well together. Countries spending heavily on arms invariably make a poorer showing in economic-social development.

The table above shows how the two goals diverge. Of the ten countries with the highest military expenditures over the period 1960-1981 *(Chart 1)*, only two, France and West Germany, have an economic-social ranking close to their rank in military expenditures. Both superpowers, far in the lead in military expenditures, have dropped in economic-social standing since this composite index was started six years ago. (See Table III for ranks for all countries; p. 43 for note on average rank for economic-social indicators.)

Unmet Human Needs

To express in global numbers the range of unmet needs in this world is the ultimate in statistical frustration. Yet the crushing poverty and the overwhelming numbers of people involved must somehow be seen in terms that define the overall dimensions of social neglect.

Behind every number is a human being with a relatively limited time on this earth. How he lives it is as important as how soon he leaves it. Too many live out lives in utter misery and despair.

Poverty—2,000,000,000 people live on incomes below $500 per year.

At least one person in five is trapped in absolute poverty, a state of destitution so complete that it is silent genocide.

In the US, militarily the most powerful nation in the world, the national poverty rate is now the highest in 17 years; there are 34 million people officially classified as poor under US poverty standards.

Jobs—600,000,000 have no jobs or are less than fully employed.

In the Third World, one in three who wants to work cannot find a regular job.

In all countries it is the young people who are hardest hit by unemployment; in the US half of black teenagers are jobless.

Health—11,000,000 babies die before their first birthday.

Relative to births, seven times as many infants die in the poorest countries as in the richest

As of 1980 less than 10 percent of children in the Third World were being immunized against the six common diseases of childhood; 5,000,000 were killed by them yearly.

Sanitation—2,000,000,000 people do not have a dependable supply of safe water to drink.

Most of the sickness and disease in the Third World is attributed to unsafe water and poor sanitary conditions.

Three-fourths of the Third World have no sanitary facilities.

Contamination of the underground water supply is becoming an increasing problem in industrialized countries, including the US.

Food—450,000,000 suffer from hunger and malnutrition.

Malnutrition has increased as more land is concentrated among fewer owners. In Latin America less than 10 percent of land owners control more than 90 percent of the land.

In the US the conference of mayors called hunger the most prevalent and insidious problem affecting the nation's cities.

Education—120,000,000 young children of school age have no school they can go to.

There is still a marked disparity between the sexes in school enrollment, from primary grades through university.

The number of illiterates continues to rise and more rapidly among women than men

Is it possible to continue this race towards super-destruction and still meet the needs of people who require all their resources to cope with basic problems of education, food, employment, health and housing?

– Luis Echeverria Alvarez

MILITARY SPENDING: THE ECONOMIC AND SOCIAL CONSEQUENCES

"Military Spending: the Economic and Social Consequences," Olaf Palme, et al., Challenge, September-October 1982, pp. 18-21.

Poverty, unemployment, inflation, the threat of world recession: the problems that make people and governments insecure are economic as well as military. In the 1980s, these economic problems are likely to become worse, not better, as a result of military spending.

The increase in military spending now under way threatens the economic security of all countries. The economic difficulties of the 1970s have shown that the benefits of postwar growth can no longer be taken for granted. In these circumstances, the sacrifice of human, material, and technological resources required by military spending is likely to be particularly costly, for rich countries as well as for the countries which still live in poverty.

The costs of worldwide military spending are so vast that they have assumed a sort of deadening familiarity. Total military spending in 1982 will amount to over 650,000 million U.S. dollars. This is more than the entire income of 1,500 million people living in the fifty poorest countries. The price of a single modern fighter plane would be sufficient to inoculate three million children against major childhood diseases. The price of one nuclear submarine with its missiles would provide a hundred thousand working years of nursing care for old people.

Expenditure on military goods and services is a form of consumption requiring resources that could otherwise have been used in civilian society. "Great fleets and armies" were, for Adam Smith, writing after the English-French wars of 1756-63, the model of "unproductive labour." After the more lethal European wars of the 1790s, another classical economist, Jean-Batiste Say, added the following gloss: "Smith calls the soldier an unproductive worker; would to God this were true! for he is much more a destructive worker; not only does he fail to enrich society with any product, and consume those needed for his upkeep, but only too often he is called upon to destroy, uselessly for himself, the arduous product of others' work."

Military consumption has increased spectacularly over time, as fleets and armies in Europe and elsewhere become more expensive and more destructive. World military expenditure is more than twelve times as great in real terms as it was fifty years ago; it is more than twenty-eight times as great as it was in 1908.

Yet such expenditure has failed in its objective of buying "security." The process of military spending yields decreasing returns to increasing "inputs" of money. Even the richest military powers buy something less than security with their immense resources: military forces which may be useless in real crises; military equipment which may be matched by an enemy who emulates their military exertions. In many developing countries, the price of military "security" is increased human misery.

Such costs seem to have become part of normal life since the Second World War. Military spending is even assumed to provide important economic benefits. One example is the "spin-off" from military science and production for civilian purposes. Another is the "Keynesian" benefit of increased employment. For several countries, the depression of the 1930s ended only with peace-time rearmament or war production. Could military spending also mitigate the present recession?

All these costs and benefits have been disputed throughout the history of the modern military effort. But present economic and military circumstances are likely to maximize the costs and minimize the benefits. The present increase in military expenditure comes at a time of economic tension unprecedented in the postwar period. The crisis in the world economy described by the Brandt Commission in 1980 is even more serious today. Despite rapid growth in many developing countries, the income gap between rich and poor countries is not closing. World trade declined in 1981 for the first time in over twenty years. Some developing countries do not have enough foreign exchange to buy food, agricultural inputs and investments.

The developed economies have grown far more slowly since the early 1970s than they did in the 1950s and 1960s. Productivity growth rates are lower than they were in the earlier postwar period. Unemployment is at its highest postwar level. The governments of most Western industrialized countries face large budget deficits; they must carry large public debt at high interest rates. Inflation is far higher than in the last period of widespread increases in military spending in the mid 1960s.

The military context is equally ominous. Military spending is growing rapidly in developed and developing countries and seems to be concentrated on the "procurement" of weapons. The largest share of military budgets goes to pay soldiers and civilian government employees. Governments also buy civilian-type goods, services, and structures. But it is their expenditure on specialized military equipment and research which is increasing most rapidly in the early 1980s. Buying weapons is, after all, a prime means of showing resolve in the military competitions of the postwar period.

All the major military spenders are increasing their purchases of expensive and complex conventional weapons. For most, such purchases require substantial amounts of foreign exchange to buy imported weapons. More and more developing countries import sophisticated weapons, many of which must be paid for as normal commercial transactions, rather than through military aid.

The nuclear powers are also modernizing and expanding their nuclear weapons. Nuclear forces account for less than 20 percent of total military spending even in the countries with nuclear weapons. But their costs are concentrated on equipment: in France, for example, nuclear forces account directly for 16 percent of the military budget, for 5 percent of all soldiers, and for 34 percent of the budget for military equipment.

Nuclear weapons were once justified as a cost-effective, high-productivity enterprise. Congressman (later Senator) Henry Jackson, speaking thirty years ago, said there appeared to be "no other expenditure of money for defense that will yield a greater return than atomic weapons" (U.S. Congressional Record, October 9, 1951). The Hiroshima bomb was "the cheapest TNT that we can make, and nuclear weapons made possible "one worker in a laboratory substituting for fifty men in uniform" (Congressional Record, June 5, 1952). Now, after thirty years of permanent military competition, nuclear weapons are an essential part of the vast enterprise of military procurement and research.

Economic cost itself is seen as the prime index of military effort. Spending more money on defense becomes an end in itself. The relative security efforts of allies and enemies are measured by the proportion of gross domestic product devoted to the military, or the absolute level of military expenditure counted in some common currency. The calculations required depend on wildly and at present unavoidably imprecise comparisons of different countries' military establishments. Military security is counted in inputs (money) rather than in outputs of "security" or even of military goods or services. This may be inevitable in an arms race where the quality of armies is determined by meters of accuracy for missiles that have never been fired over their ultimate paths, by the potential to destroy fourteen thousand or sixteen thousand cities. But the competition to spend is likely to reduce further the economic efficiency of expenditure for military security. And it supports the false and dangerous objective of "inflicting costs" on an enemy through an accelerated and economically debilitating arms race.

Military expenditure in the developed countries

The organization of military expenditure varies greatly, so far as can be told, in different developed countries. But military expenditure is increasing in the North as a whole.[1] In the 1970's, the developed countries spent a lower proportion of their gross domestic product (GDP) on defense than in the 1950's and 1960's (although the proportion was still far higher, for most countries, than had been the case before the permanent high levels of peacetime military expenditure that followed the Second World War). This relative decline apparently came to an end in the late 1970's. The change has been most striking in the United States, where the present increase in the military share of national income follows a decline in the 1970's. Military expenditure is also increasing faster than GDP in France, the United Kingdom, Japan and Turkey among other countries. In the Soviet Union, the military share of GDP seems to have declined slightly or remained steady in the 1960's, but may increase in coming years.[2] Military expenditure is also increasing in the German Democratic Republic (see Table 1).

Expenditure on military research and development is increasing even faster than overall military spending. In the 1970's, the amounts spent on military research by OECD (Organization for Economic Cooperation and Development) countries grew little in real terms (see Tables 2 and 3). But here again the tendency changed in the late 1970's. The change is particulary striking in France, where military research has grown sharply since 1976, in Britain, and in the United States. (In Federal Republic of Germany and Sweden military research has declined.) There is little public information about the cost of Soviet military research. But most Western estimates suggest that military research in the Soviet Union accounts for a very large share of the military budget. With the rapid expansion in U.S. military research proposed for 1983 to 1985, worldwide military research will continue to increase faster than military expenditure, or than national income.

In many countries, the share of pay in military spending has declined in the late 1970's--reducing the capacity of the military to generate new employment for people who are presently unemployed. This tendency seems likely to continue, at least in countries where weapons procurement is increasing rapidly.[3] Thus, official U.S. projections show expenditures on procurement and research increasing more than three times as fast in 1981-85 as expenditures to pay military personnel. Payments to active military personnel are projected to decline from 23 percent to 16 percent of total military spending.

Table 1

Military expenditure as a percentage of gross domestic product: selected developed countries

	1950	1970	1970	1976	1977	1978	1979	1980	1981
Australia	3.0	2.7	3.5	2.9	2.9	2.8	2.7	2.8	-
Belgium	-	3.6	2.9	3.1	3.1	3.3	3.3	3.3	3.3
Canada	2.6	4.2	2.4	1.8	1.9	2.0	1.8	1.8	1.8
Czechoslovakia	-	4.0	3.9	3.1	3.1	3.1	3.1	3.2	-
FR Germany	4.4	4.0	3.3	3.5	3.3	3.3	3.3	3.3	3.4
France	5.5	6.5	4.2	3.8	3.9	4.0	4.0	4.1	4.2
German DR	-	1.2	4.5	4.1	4.0	4.1	4.2	4.4	-
Greece	6.0	4.9	4.8	6.9	7.0	6.7	6.3	5.6	5.9
Israel	4.7	5.5	23.8	27.2	25.5	20.9	20.2	(14.0)	-
Italy	4.3	3.3	2.7	2.3	2.4	2.4	2.4	2.4	2.5
Japan	-	1.1	0.8	0.9	0.9	0.9	1.0	-	-
Netherlands	4.8	4.1	3.5	3.2	3.5	3.2	3.4	3.3	3.4
Poland	-	3.5	4.0	2.6	2.7	2.6	2.7	2.8	-
S.Africa	0.8	0.8	2.0	4.1	4.6	4.3	3.8	3.2	-
Spain	-	2.2	1.6	1.8	1.7	1.7	1.7	-	-
Sweden	3.5	4.0	3.6	3.2	3.3	3.3	3.3	3.1	-
Switzerland	2.6	2.5	2.2	2.3	2.1	2.1	2.2	2.1	-
Turkey	6.2	5.1	4.3	6.2	5.8	5.2	4.3	4.3	4.8
UK	6.6	6.5	4.8	4.9	4.8	4.6	4.7	5.1	5.0
USA	5.1	9.0	8.0	5.4	5.3	5.1	5.2	5.6	5.8
USSR	-	(12.4)	(12.0)	(9.9)	(9.5)	(9.2)	(9.1)	-	-
Yugoslavia	-	7.2	5.0	5.6	5.3	4.9	4.6	-	-

Source: SIPRI Yearbook 1980, 1982. Figures given for countries with annual military expenditure of over $2,000,000,000 in 1981 (in 1979 U.S.$). Figures in parentheses are SIPRI estimates. Official Soviet estimates are shown in footnote 2.

With rising military purchases, particularly of weapons and research, and continuing arms exports, the production of specialized military industries is increasing.

Most military equipment is produced in a few countries—mainly the United States, the Soviet Union, France, the United Kingdom, and the Federal Republic of Germany which together account for over 90 percent of world military research and over 80 percent of arms exports. Countries which import most of their major weapons use fewer skilled and scientific workers in military production, but more foreign exchange to buy military goods. In these countries the political and economic pressures associated with military spending are likely to come not so much from a "military-industrial complex" as in arms-producing countries, but from a "military-communal complex"—collections of local interests organized around military installations and activities in particular regions and communities.

Military spending is concentrated in a few industries which are often highly dependent on government customers.[4] It is volitile over time, changing with military needs, political circumstances, and technological innovations. Individual industries sometimes change dramatically in relative importance, as has been the case with the increase in military electronics in the 1970's.

The boom in military industries affects the environment in which decisions about military spending are made. All countries justify their military efforts on the grounds of national security. But they are all also subject—given the local and national economic impact of military spending--to pressures from the regions, industries, and employees associated with the military enterprise. "We need to recognize," wrote the American economist Arthur Burns in 1968, "that the scale of defense expenditures has, to a significant degree, become a self-reinforcing process. Its momentum derives not only from the energy of military planners, contractors, scientists and engineers. To some degree it is abetted also by the practical interests and anxieties of ordinary citizens." The force of this process may have been slightly reduced in the 1970's, but with the present increase in military expenditure it is likely to become even more compelling.

Table 2

Public research and development expenditure on defense, selected OECD countries (in thousands of millions of U.S. dollars at 1975 prices and exchange rates)

	1971	1975	1979	1980	1981
United States	10.4	9.7	10.4	10.4	11.5
United Kingdom	1.1	1.4	1.6	1.7	1.6
France	-	1.2	1.5	1.6	-
West Germany	0.6	0.6	0.6	0.6	-
Sweden	-	0.2	0.2	0.1	0.1
Japan	-	0.1	-	-	-
Canada	-	0.1	0.1	-	-
Italy	0.03	0.02	0.03	0.03	-
Switzerland	0.04	0.03	-	-	-
Netherlands	0.04	0.03	0.03	0.03	0.03

Source: OECD, Science and Technology Indicators, July 1981.

Table 3

Public expenditure on defense research and development as a percentage of GDP, selected OECD countries

	1971	1975	1979	1980	1981
United States	0.78	0.60	0.81	0.80	0.64
United Kingdom	0.62	0.61	0.83	0.59	0.57
France	0.33	0.35	0.39	0.41	-
West Germany	0.16	0.14	0.13	0.12	-
Sweden	-	0.24	0.20	0.18	0.18
Japan	-	0.01	0.01	-	-
Canada	0.06	0.03	0.03	-	-
Italy	0.02	0.01	0.01	0.01	-
Switzerland	0.07	0.05	-	-	-
Netherlands	0.05	0.03	0.03	0.03	0.03

Source: OECD, Technical Change and Economic Policy (1980), p.40, OECD Science and Technology Indicators, July 1981.

Military spending and employment

Military expenditure, like other forms of public and private consumption, creates demand and employment. But several characteristics of the present military build-up suggest that military expenditure is not effective in reducing the kinds of unemployment that exist today. The overall employment effects of an increase in military spending depend on the way in which the increase is financed. Military demand in OECD countries appears to create substantially fewer jobs for a given sum of money than nonmilitary public consumption and investment. If therefore, increased military spending were financed entirely out of increased taxes which reduced personal consumption and investment, then one could expect, all other things being equal, an initial increase in employment for a given level of national income. But to the extent that military spending substituted for investment, it would reduce economic growth and future employment.

If increased military spending were compensated for by a corresponding reduction (or reduced growth) in non-military public spending - as seems to be the case in several countries in the early 1980's - then employment can be expected to fall. A detailed study of military employment in the United States estimated that a billion dollars spent on defense in 1975 would have created 76,000 jobs, compared to 80,000 for local expenditure on health, and 104,000 for local expenditure on education.[6] Since then, the contrast is likely to have become even sharper: (a) because military purchases are concentrated in manufacturing industries while other public purchases come largely from construction and services where productivity is growing only slowly; and (b) because pay has fallen faster as a share of military spending than as a share of other public spending.

It is possible that military expansion could be entirely financed by increased budget deficits - out of government borrowing that would not otherwise have taken place. In that case, more new employment would be created than without deficits. But such a policy seems unlikely in the early 1980s. Increased government borrowing can lead to high interest rates and thus reduce private investment. If deficits are accompanied by restrictive monetary policies, private consumption might also fall. The western governments which are likely to see military security as the only justification for increased public spending also seem especially determined to permit only slow growth of the money supply.

The employment created by military spending is also affected by the changing composition of spending. The trend towards a lower share of pay in military employees generates more jobs than the same amount of money spent on other military purchases. In France, for example, one billion francs spent in 1970 to pay military and civilian personnel created 44,300 jobs, while a billion francs worth of other military purchases created only 18,330 jobs.[7] The shift to military procurement is likely to reduce employment created - both in countries with military industries and in those which import large proportions of their purchased military goods.

The composition of military expenditure moreover determines the kind of employment created by military demand. Military expenditure in general creates jobs for skilled workers. In the United States, for example, a 1968 study concluded that the defense labor force "is generally more skilled than the civilian labor force." At that time - when military spending was high, but less strongly biased towards technically sophisticated activities than it is now - defense employment

accounted for 6.1 percent of all workers, compared to 19 percent of all machinists, 22 percent of all electrical engineers, 38 percent of all physicists, 54 percent of all aeroplane mechanics, and 59 percent of all aeronautical engineers.[8] Countries such as Japan which manufacture much less specialized military equipment employ fewer skilled workers in defense industries. But they too must maintain sophisticated imported equipment.

Military procurement and research require particularly highly skilled workers. The labor force in military industries is exclusive in all the main arms-producing countries. In France, for example, the proportion of engineers in 'aero-naval' industries in 1973 was five times as great as in the overall economy, the proportion of technicians over four times as great, and of skilled workers almost twice as great. In the United States, over 10 percent of employees in the aircraft, communication equipment, and ordinance industries are engineers, compared to only one percent in the overall economy. The proportions must certainly be similar in the Soviet Union and the few other countries which produce highly sophisticated military equipment.

The centrally planned economies do not suffer from unemployment in the Western sense. But they do experience social and economic costs as industrial conditions change: underemployment, human costs, costs of retraining and relocating workers. The labor force is growing only slowly in many Eastern European countries. In such countries, a rapid increase in defense procurement is likely to create disproportionate pressures on the skilled and scientific workers who are most in demand elsewhere in the economy.

One kind of military spending - soldier's pay - does create jobs for large numbers of unskilled workers, notably young men. It thus employs workers who in most countries are relatively likely to be unemployed (although it does less for another group which has almost as high unemployment - young women). The military also employs some civilians who might otherwise be unemployed, particularly in and around military facilities in depressed regions. But these are not the kinds of spending which are increasing fastest in the early 1980s. And the skills required both in the armed forces and for civilian military employees are presumably increasing as military equipment becomes technologically more sophisticated.

All these changes suggest that the industrial employment created by increased military spending will be of far greater advantage to engineers and technical workers - whose wages are high and whose unemployment rates are generally extremely low - than to the unskilled workers, particualry young people, who are most seriously hurt by present high levels of unemployment.

The "Keynesian" expectation

Military spending, in sum, is not likely to return developed economies to full employment. In the 1940s, increased military spending bought boots and tanks and a mass mobilization, not research and military electronics. In the new military context, the precedent of the last depression is an illusion.

The "Keynesian" view of military spending is in large part, of course, a political one. Its premise is that increased military spending may be the only politically plausible way of increasing public demand; that conservative governments, in particular, will only increase deficits in the interest of national security. Keynes himself, in 1940, saw economic benefits in the "vast dissipation of resources in the production of arms": "It is, it seems, politically impossible for a capitalist democracy to organize expenditure on the scale necessary to make the grand experiments which would prove my case - except in war conditions." Several Marxist economists have also argued that militarism is, in Rosa Luxemberg's words, "a preeminent means for the realization of surplus value" in part because capitalists can influence public opinion in favor of military production.

Yet peacetime military spending clearly has economic costs. It creates less employment than other forms of public spending; it is highly changeable; it poses dangers for inflation. And it is no longer the only politically popular form of expenditure. The difficulty certain governments have found in cutting nonmilitary public spending shows not only that there is continuing need for expenditure on health, welfare, or old age benefits, but also that there is substantial political and public support for such expenditure. The military-industrial complex of political support for military spending is itself less unanimous than it was in the earlier postwar period - as machinists', aerospace, and metal-workers' unions in several countries have drawn attention to the economic and other costs of increased military activities.

Present economic circumstances moreover make it likely that any problems of converting resources from military to civilian use will be temporary. Eastern and Western countries have many social and other needs, which cannot be met in present conditions of slow economic growth. Projects for conversion are discussed fully in the recent and comprehensive Report on the UN Group of Governmental Experts on the Relationship between Disarmament and Development chaired by Inga Thorsson.[9]

The present level and form of military spending is not necessarily the only way in which developed countries can achieve the security they seek. Such spending, "such dissipation of resources," should in any case only be justified on military grounds. Its economic benefits are trivial in comparison with its economic costs.

Inflation

Since the colonial wars of the 1750s or before, rapid increases in military spending have been associated with rising prices. The "peacetime" wars since 1945 were times of inflation in Western countries. In 1950-51, the year of sharply increased weapons procurement for the Korean War, the increase in the consumer price index in the United States went from less than one percent a year to 7.9 percent, and in Britain from 2.9 percent to 9.7 percent. Then increase in U.S. military expenditure of the Vietman War in 1965-67 - and the financing of the war by government borrowing and increases in the money supply - contributed to the beginning of high levels of inflation in the United States and elsewhere.

Under present conditions - in the apparently inherently inflationary world economy of the 1980s - even a much gentler increase in military spending may exacerbate inflation. Economists disagree as to the causes of inflation. Some argue that increased military spending is only likely to lead to higher prices if it is accompanied by rapid growth in the money supply. Others suggest that the macroeconomic effects of increased demand could lead to some increased inflation, even in economies with unemployed resources. Military expenditure, after all, adds to demand but unlike spending on roads, schools, or hospitals it does little to improve productivity in the long term.

There are further dangers of inflation from military pressures on specific economic sectors, particularly in the main arms-producing countries. Military procurement is highly concentrated in a few industries, notably electronics. Yet the computer and electronics industries are among the few industrial sectors which are already operating at close to full capacity, thanks to strong civilian demand. Regions with electronics industries are relatively prosperous. Their engineers and technicians are close to being fully employed, and it takes several years to increase significantly the supply of such skilled people.

These are the conditions in which "bottleneck inflation" is likely. Build-ups which look small compared to the entire economy can look large relative to the output of the industries where the demand actually takes place. The military sector must attract workers and equipment from civilian industries by offering to pay higher prices or wages. Sudden large increase in demand cannot be met and must be rationed off with price increases for military output and also for civilian goods produced by the same industries.

The process of military procurement is itself inherently inflationary. Military purchasing involves risky and volatile demand, the need for high-quality output and markets with a single buyer, few sellers, and little foreign competition. These circumstances seem to be peculiarly conducive to price increase, at least in market economies with large military industries. Thus in the United States, in 1972-80, the implicit price deflator for "national defense purchases of electronic equipment" increased by 6.6 percent a year, while the deflator for "personal consumption expenditures for radio and television receivers" increased by only 1.6 percent a year. Studies for Britain, the Federal Republic of Germany, Sweden, and France show similar discrepancies between military and consumer prices in the 1960s and early 1970s.[10]

The overall consequences of such inflationary processes are impossible to predict. They are likely to be most significant in arms-producing countries which increase their military spending rapidly. It is worth noting, nonetheless, that in the largest such Western country, the United States, official analysts do anticipate "bottleneck" problems. The 1982 Report of President Reagan's Council of Economic Advisers (as incorporated into the Economic Report of the President, 1982) comments that defense expenditure "will be concentrated in the durables sector," and "will add to pressure on the durables manufacturing sector." In real terms, according to the report, weapons procurement and research and development "will grow at an estimated rate of 16 percent annually between 1981 and 1987. This exceeds the 14 percent annual rate of increase that occured during the 3 peak years of the Vietnam buildup." The "anticipated" effects may be higher "relative prices in at least some of the affected industries," "delays in the delivery of military goods," and "some temporary crowding out of private investment."

Arms-importing developed countries and countries where military spending increases only slowly are generally less subject to inflationary pressures from increases in military spending. But they must, of course, use increasing amounts of foreign exchange if the price of the arms they import increases, as is likely to happen if bottlenecks occur in major arms-producing countries. And the experience of the period since 1965 suggests that inflation in one country--particularly ones as important to trade as the United States and the other main military spenders--is transmitted very rapidly throughout the world economy.

Eastern European economies will not be immune to the effects of such generalized inflationary pressures. They may also, if their own military purchases increase rapidly, experience scarcities, delays, or rationing. As in market economies, specialized military equipment is produced in concentrated industries, by highly skilled workers. In the Soviet Union, military industries appear to be more isolated from civilian production than in market economies--yet the planning process itself may make adjustment to bottlenecks particularly difficult.

Economic growth and economic structure

In the longer term, the costs of military spending are likely to be even higher. The peculiar character of the present military expansion--its uneven demand for technical workers and for the output of mechanical and electronic industries--poses particular problems in the condition of the post-1973 economic crisis.

Military security requires the sacrifice of other forms of private and public consumption. It can also, by reducing investment, lead to the sacrifice of future consumption, of economic growth. The determinants of economic growth are complex and idiosyncratic. Yet even a cursory examination of different countries' performance suggests that those countries whose military spending has been relatively high over the postwar period--the United States, the Soviet Union, the United Kingdom--were not best equipped to withstand the economic troubles of the 1970s. Many of the large and small economies where growth remained high--Japan, Canada, Finland, Austria, Hungary--spent relatively little on the military.

In OECD countries, military expenditure has been shown to have had a negative effect on investment. Military spending was in the 1950s and 1960s a substitute for investment in future productive capacity and in civilian public structures. This may have happened because monetary policies and interest rates reduced funds available for private investment; military demand for mechanical equipment may have increased the cost of capital goods purchased from the same industries. The consequuences of such foregone opportunities are likely to be particularly serious under present conditions of slow economic growth.

Military spending seems also to have reduced investment in Eastern Europe. The government of Czechoslovakia has said that disarmament would increase "productive capital investment" and thereby help to meet "unsatisfied" capital requirements--under particularly favorable conditions "since to a large extent the productive capacities involved (in the military) are in the sphere of engineering." In the Soviet Union, too, military activities are likely to have reduced investment. Some Western economists have involved "a decline in new capital investment by almost the full amount of the increase in military outlays, and a retardation of output growth that peaked several years after the initial shock." More recent studies suggest that the effects would be particularly serious to the extent that the increase was concentrated in procurement and military construction.[11]

Military demand may further reduce economic growth by limiting technical change in the civilian economy. In countries with military industries, military demand is of disproportionately great importance in the goods-producing and above all in the "metal products" sectors of the economy.[12] These industries are the main lock of technical change--the employers of the greatest concentration of scientists and technicians, the sectors that perform most industrial research, the source of essential capital goods and industrial inputs.

Technical change is generally assumed to have been a major source of economic growth and productivity growth in the postwar period. It is needed most urgently in the 1980s: to generate new employment, to create new industries and to increase productivity in the growing public and private service sectors. Yet if the military build-up continues, the technological potential of the main arms-producing countries may be increasingly influenced by military demand. This would pose special problems for countries where employment and output is growing most rapidly in the service sectors--where increasing military production could thus consume a growing share of a diminishing industrial sector and reduce competitiveness in industrial exports.

The sacrifice of technical possibilities is equally serious for other major powers--for the Soviet Union, for example, where an advanced military sector co-exists with a civilian economy in which output per person is well below the average for developed countries. The volatility of military demand may also pose particular problems for centrally planned economies, in ways that could further reduce the possibilities for growth. As a Sovie. expert wrote in a paper for the Commission, military crises "require that pre-set priorities be changed, make it necessary to look for additional resources, hinder normal performance of a centrally planned economic mechanism."

Military science and technology

Research and development (R&D) have been an essential component of military power since the mobilization of scientists during the Second World War. R&D accounts for over 10 percent of total military spending in the United States, France, and the United Kingdom; their share is at least as large in the Soviet Union.

The sums devoted to military research far exceed those for any other public research objective. Defense accounts for half of all publicly financed research in Britain and the United States, and more than a third in France. In West Germany, by contrast, it accounts for only 10 percent, and in Japan 2 percent. Britain alone spends more public money on defense R&D than all the OECD countries together spend on reseacrh for environmental protection, transport, and telecommunications. The United States spends more on defense R&D than all OECD countries' publicly financed research on energy production, industrial growth and agriculture, and more than the entire public research expenditures of West Germany and Japan together.

Such a commitment of resources requires economic and social sacrifice. The supply of scientific labor and equipment is limited, at least in the medium term. Resources used for defense are not available for purposes of civilian innovation, economic growth, social or medical progress. The sacrifice required is particularly costly to the extent that the resources in question are of high quality--the nation's "strongest scientific collectives, "in the phrase used by Leonid Brezhnev of Soviet defense scientists and designers.

The "spin-off" from military science could compensate to some extent for these lost opportunities. Military research and innovation can have subsequent civilian applications or spin-off: from standardized parts developed under the pressure of nineteenth-century war to advances in nuclear energy, aircraft, and electronics stimulated by the permanent scientific mobilization since 1945. In the long term, military demand can increase the supply of scientists, engineers, and their equipment.

But such spin-off benefits can never fully match the costs of military research. Civilian research presumably has greater total benefits for the civilian economy than does military research. Increased military research can only make the civilian economy better off if there is little possibility of increasing civilian research. Arguments about spin-off thus depend on a political premise analogous to that implied in Keynesian expectations about military employment, and equally unprovable; that resources used in military research have, as a matter of political reality, no alternative use--they would not otherwise be used for directly civilian purposes. As in the case of military spending and employment, military research should only be justified on grounds of security; its economic costs will always be greater than its economic benefits.

Specific applications of military technologies--of which the most spectacular are to be found in parts of the electronics industry--have provided major benefits to particular industries. But military spin-off may be of less civilian use in the 1980s and 1990s than it was in the earlier postwar period.

The objective of the nuclear powers in the present military build-up look particularly unpromising. It is impossible to predict the quirks and delays by which scientific discoveries are translated into subsequent technologies. But industrial countries urgently need technological innovations to reduce costs of production and limit inflation, to create new employment, to improve health and reduce costs of medical care. Such social objectives are not obviously congruent with the pressing military priorities of the Soviet Union and the United States--from silent nuclear submarines to guidance for intercontinental ballistic missiles, and communications system for the period following a nuclear war.

It is possible, too, that military involvement may alter the character of a country's scientific institutions, even when it provides extra resoures for scientific work. Military science requires qualities--secrecy and the isolation of scientists--which are not necessarily favorable to civilian research, or to the civilian diffusion of discoveries. The most spectacular applications of American research in military electronics have come not in the United States but in a country--Japan--with a different and impeccably civilian organization of science, technology, and commercial innovation; whose military industry is about the size of its toy industry; and which, with an economy over half the size of that of the United States, spends less than one hundredth as much public money on military research.

Countries which spend heavily on military research, notably the United States and the United Kingdom, have a large scientific base, as measured by the proportion of GDP dedicated to research and development. But the civilian research effort of these countries has grown less rapidly than that of other large OECD countries, and is now smaller relative to GDP than in several other countries. From 1967 to 1979, total civilian R&D in the United States, United Kingdom and France remained constant or declined as a share of GDP, while in West Germany and Japan they increased by almost 50 percent.[13]

In centrally planned economies, where military research institutes are often isolated from design bureaus and from military industries as well as from civil production, there are also limitations of spin-offs. The effects of military secrecy may reduce the quality of military and non-military research. (Soviet experts state that centrally planned economies will be able to reduce such obstacles under different international circumstances.) Soviet leaders have indeed urged increase spin-off in machine building; as Leonid Brezhnev has said, "taking into account the high scientific-technical level of defense industry, the transmission of its experience, inventions and discoveries to all spheres of our economy acquired the highest importance."

Military R&D may, finally, have consequences which go even beyond their opportunity costs, more or less imperfectly mitigated by subsequent economic benefits. The perpetual motion of military science may be one of the most important forces sustaining present high levels of military expenditure and military insecurity.

Many scientists and soldiers--Mountbatten and Admiral Rickover, government science advisers such as George Kistiakowsky, Jerome Wiesner, and Solly Zuckerman--have testified to the momentum of military science. As Zuckerman has written: "...ideas for a new weapon system derive in the first place, not from the military, but from different groups of scientists and technologists who are concerned to replace or improve old weapons systems... At base, the momentum of the arms race is undoubtedly fueled by the technicians in governmental laboratories and in the industries which produce the armaments."

The destabilizing effects of military R&D are even more serious to the extent that research is committed to the search for a qualitative break-through, an ultimate weapon. One cannot look at the history of the nuclear arms race, of bombs and missiles invented and deployed, without doubt whether competition in military research has added to the security of any nation.

Military spending in developing countries

The costs of military competition are qualitatively different in developing and developed countries. In both the South and the North, the military uses government revenues which could otherwise be spent on health or on edcuation, on improving people's lives. In both, it uses scarce technical and industrial resources. But in many developing countries, these sacrifices increase human deprivation. Even in high-income developing countries military spending can jeopardize economic growth and development for lasting security.

The character of recent military expansion makes these costs especially great. Developing countries' purchases of sophisticated, mostly imported weapons have increased dramatically since the early 1970s. And a large share of their weapons imports are not part of military aid programs as in the earlier postwar period, but commercial purchases which must be paid for with foreign exchange. The economic costs of military spending are likely to increase in the 1980s; any economic benefits will be small.

Statistics on military activities in the Third World are of even poorer quality than for industrialized countries. But the past decade has clearly been one of great expansion, both in the quantity of weapons, and in their sophistication.

The cumulative military expenditure of the developing countries amounted to $316 thousand million in 1975-79, measured in 1978 prices. $147 billion was by OPEC countries and $169 billion by other developing countries.

Over the 1970s reported military expenditures in developing countries, including China, rose by 6 percent a year in real terms, compared to only one percent a year in developed countries. The developing countries' share of world military expenditure increased from 19 percent in 1971 to 25 percent in 1980, The pattern of expenditure, of course, varies enormously by region. China's military spending is far larger than that of any other developing country, and is estimated to be about one-third as great as military spending in the United States and the Soviet Union; it appears, however, to be constant in real terms, or slightly declining. (In what follows, China is not included in general discussions of "developing countries," except where specifically noted.) In the Middle East, where spending is rising fastest, per capita military expenditure is greater than in Europe; in South Asia, total military expenditure for almost one billion people is less than the military budget of Italy alone.

Table 4

Military expenditure as a percentage of gross domestic product, selected developing countries

	1950	1960	1970	1976	1977	1978	1979	1980
Argentina	2.8	2.3	1.9	2.2	2.0	2.3	2.5	2.0
Egypt	-	(5.8)	16.2	24.9	22.5	(13.3)	(9.6)	-
India	-	1.9	3.0	3.2	3.0	2.9	2.8	-
Indonesia	-	5.4	3..1	(4.9)	4.3	4.2	3.6	2.3
Iran	-	4.3	6.6	12.4	10.9	-	-	-
Iraq	-	7.1	11.2	11.2	10.4	-	-	-
Korea,S.	-	6.1	3.8	5.8	5.9	6.2	5.4	6.0
Kuwait	-	-	3.9	6.6	7.5	7.1	(5.0)	-
Libya	-	-	(4.1)	(8.3)	(7.5)	(11.7)	-	-
Malaysia	-	2.2	4.1	4.4	4.7	4.6	4.1	5.6
Nigeria	-	0.5	5.8	4.4	4.5	4.0	-	-
Oman	-	-	11.6	32.8	26.9	29.6	22.9	22.3
Pakistan	-	2.8	6.1	5.5	5.4	5.3	5.0	5.2
Saudi Arabia	-	-	(11.8)	(14.4)	(14.8)	(16.3)	(16.5)	-
Syria	-	-	11.9	14.8	15.3	14.0	21.1	16.6
Taiwan	-	10.5	8.5	7.5	(8.3)	(8.5)	-	-
Thailand	1.6	2.6	3.2	3.5	3.3	3.3	3.6	3.4

Source: SIPRI Yearbook, 1980, 1982. Figures in parentheses are SIPRI estimates. Figures given for developing countries whose annual military expenditure in 1980 exceeded $1,3000,000,000 (in 1979 U.S.$), and for which figures are available. SIPRI does not publish estimates of Chinese military expenditure as a percentage of GDP.

The overall increase in military spending was fastest in the mid-1970s. But the early 1980s appear to have brought a new acceleration. Rich and poor countries have participated in the military build-up. In the oil-exporting countries with surplus capital (Saudi Arabia, Iraq, Libya, and the smaller Gulf oil exporters) military expenditure increased more than sixfold in real terms in the 1970s, and Saudi Arabia has surpassed Britain as the sixth largest military spender. Yet the capital surplus countries still accounted for only one-third of all military spending by developing countries. Oil importing developing countries doubled their military spending in real terms in the 1970s, as did the poorer oil-exporting countries.

Arms imports increased even more rapidly than overall military spending. Cumulative arms imports by developing countries were worth $65.2 billion in 1975-79 in constant 1978 prices, $32.3 billion worth by OPEC countries, and $32.9 billion worth by other developing countries.[14] Developing countries imported $5.6 billion worth of weapons in 1970 (measured in constant 1978 U.S. dollars) and $16.1 billion worth in 1979. All categories of countries participated in the expansion. In 1977-79, the capital-surplus countries accounted for less than a third of developing countries' arms imports. In those years, six oil-importing developing countries—including two with per capita incomes below $200 in 1979—imported more than a billion dollars worth of arms. The composition of military spending has thus shifted, as it is shifting in developed countries, towards the procurement and maintenance of armaments, and away from paying armies. (Many developing countries spend a higher proportion of military expenditure on procurement than do developed countries. This reflects the fact that wages are generally many times lower in developing countries, while imported weapons cost the same as or even more than in developed countries.)

Arms production in developing countries has also increased substantially in the 1970s. Brazil and India have well-established arms industries. Other newly industrializing countries, including Taiwan, Singapore, and South Korea, have expanded their military production. Their output ranges from sophisticated military aircraft produced under license or indigenously designed, to ammunition and cheap electronic equipment. Brazil exports military aircraft to at least nine developed and developing countries, and several other developing countries have increased their export of new or second-hand military goods.

The economic consequences of arms imports

Developing countries arms imports are worth twice as much in absolute terms as the arms imports of all developed countries. The discrepancy in relative terms is far greater. Thus, two poor countries, Ethiopia and Somalia, spent more on arms imports in 1977-79 than did all the Nordic countries plus the Netherlands. Arms imports were worth less than 0.1 percent of the national income of the six European countries, but about 14 percent of the national income of the two African countries. Their cost was equivalent to the income of 36,000 people in the European countries but of 5,000,000 people in the African countries.

Until the 1970s, a large proportion of developing countries' arms imports were paid for by the exporting countries as part of their military aid. Now, much of the cost of far more complicated and expensive arms is paid by developing countries themselves. Although capital-surplus countries have increased their own military aid, this relieves little of the burden of arms imports for most countries.

Arms imports thus require foreign exchange, either earned or borrowed, which could otherwise be used to buy investment goods (or which in the short term might buy food and agricultural inputs such as fertilizer). Some part of the money spent on weapons would undoubtedly not be available for other purchases, notably loans by arms-exporting countries which would not be forthcoming to finance civilian goods. Even these loans, however, must eventually be repaid. And foreign exchange spent to buy arms, unlike that spent on investment goods, does not increase a country's capacity to earn foreign exchange in the future and thus to pay interest on and repay existing debts.

Almost all developing countries now face declining prices for their exports, and many must make debt service payments at high interest rates. In these circumstances, the burden of paying for arms imports becomes even more likely to reduce economic growth. For several countries, the value of arms imports is large relative to their total deficit. The low-income oil-importing countries' arms imports were actually worth more in 1977-79 than their cumulative current account deficit. In Africa, arms imports were equivalent to 8 percent of the total value of imports in 1977-79, compared to less than 2 percent in 1970. Unless they somehow match these foreign exchange outlays with an export push, some African nations may be forced in the 1980s along the path of a country such as Peru, which contracted large commercial bank loans in the mid-1970s, many of which were used to finance arms imports. When credit was later cut back, Peru was obliged to follow highly deflationary economic policies in a stabilization program arranged with the International Monetary Fund.

Arms imports--however they are financed, and once the weapons have actually been delivered--also require skilled labor for their operation and maintenance. Scarce technical and managerial workers who would otherwise contribute to civilian capital formation are preoccupied with military undertakings. The country's ability to "absorb" civilian projects is strained, and it gets less growth from its existing investment. Some arms imports undoubtedly contribute to economic growth. Countries in the Middle East, for example, import "military construction services" as well as military hardware, acquiring roads and ports that can be used for civilian as well as military purposes; and foreign military technicians can presumably impart civilian skills during their tours of duty. But these effects are likely to offer only small compensation for the overall costs of military imports.

Economic growth and economic structure

Economic spending reduces economic growth developing countries. The most recent econometric findings (for sixty-nine countries in the 1950s and 1960s) show that increases in military spending had significant effects on rates of growth. They also show that increased military spending reduced both investment and agricultural production. On average across countries, a one percent increase in the military share of GDP was associated with a 23 percent reduction in the investment share of GDP, and an 18 percent reduction in the share of agriculture.[15]

These findings suggest that, as in developed countries, military spending in developing countries uses resources which would otherwise be available for domestic investment. The effect is likely to have been even greater in the 1970s, to the extent that military spending was increasing fast and shifting towards procurement of sophisticated imported equipment. The negative effects on agriculture suggested in the econometric studies could also have adverse social and economic consequences. If military spending leads to a reduction in food production, the outcome could be increasing dependence on food imports and reductions in the real incomes of the poorest people, in both the cities and the countryside.

In many countries, including the poorest arms-importing countries in Africa, even the "civilian-type" goods and services which are produced locally in developed countries must be imported: such countries import uniforms and army boots, and even construction material and technicians for building simple military facilities. There is little possibility that military production will stimulate economic growth in these countries.

The ways in which military spending affects economic growth and structure vary enormously in different countries. Military spending is more likely to stimulate growth in developing countries with military industries. Yet these industries have florished in countries which already had a diversifed manufacturing industry.

There are other countries, including several which are now "newly industrialized," which benefited economically from the post-war arms race between the great powers. Taiwan, South Korea, and Greece received large amounts of U.S. military and economic aid in the 1950s and 1960s. Such aid helped ease foreign exchange bottlenecks, while overall demand was kept high by domestic military spending. But like any other single factor, the military effort can explain only a part of these countries' economic history. They had other opportunities, of which they took advantage. By contrast, ties to great powers and ample foreign aid did not transform Turkey, Iran, and Egypt into prosperous new industrial economies. And other fast-growing countries, such as Brazil, the Ivory Coast, and Mexico, were far more removed from the direct effects of the wars and cold wars which have occurred since 1945.

Can military spending nonetheless have positive Keynesian effects in developing countries, even those without military industries? Unemployment and underemployment are after all endemic in virtually all the poorer developing countries. Much of the increased demand for military equipment flows to suppliers abroad. But construction workers on military bases and newly employed soldiers and sailors--Adam Smith's "unproductive" workers--spend their wages, and this spending could give other people jobs.

There are several reasons to doubt that increases in overall demand coming from the military will stimulate output and growth in most of the Third World. Total production in a developing economy is likely to be strictly limited, though the constraining forces differ from time to time. They all center on shortages of scarce inputs into the production process: land, physical capital, foreign exchange, or skilled labor. With output held down by scarce resources, an increased share devoted to the military can only come about through reductions in other forms of demand such as civilian consumption purchases or capital formation. (Under such circumstances, increased military spending could also lead to a more unequal distribution of income. People who work in the defense establishment are likely to have relatively high incomes and "modern" tastes. Their extra demand might be met by diverting capacity and capital formation from industries producing wage goods consumed by less skilled workers and poor. Demand increases, but as a consequence the distribution of income gets worse.)

Even the direct employment benefits of the defense effort may be small. As in developed countries, military spending creates jobs for people who already have them. The military employs skilled people, often in and around large cities and port; and the people who are unemployed tend to be unskilled workers and people living in the countryside. The exact fit, or misfit, of military demand and economic structure depends, of course, on the particular sort of military security that a country wants. One can easily imagine armies whose organization and equipment and geographical dispersion are such as to create large numbers of jobs for unemployed people: armies which are used for development and employment.

But present tendencies--a military effort organized around sophisticated and imported equipment--do not seem to favor such benefits. The trade in aircraft and missiles and ships is also a trade in ideas--ideas about military strength, about the organization of military expenditure.

Certain effects of military expansion can also impede economic and social development more generally. There are dangers for any country that adopts "alien lifestyles and ideologies," and a "military culture." Just as armies could be used to reduce underemployment, so they could also encourage usable skills, complementary military and civilian projects, and indigenous social development. But these alternative ideas of security are hardly dominant in the military boom of the 1970s and early 1980s . As developed countries, military spending should be justified as a way to buy "security", not for its economic benefits.

The arms trade in the world economy

The import and export of weapons have become an essential feature of international trade in the last ten years. This commerce is likely to have serious economic costs for arms-importing developing countries. It has evident benefits for exporting countries. But in the long term it may not be in the economic self-interest of either group, or of the world economy as a whole.

The arms export boom was one of the ways in which certain market and nonmarket developed economies adjusted to the financial changes of the 1970s. Through arms exports, they shifted part of their increased oil costs to developing countries, inlcuding oil-exporting countries.

Since the first oil price increase of 1973, the "capital surplus oil exporters" have shared a trade surplus which increased from $3 billion in 1972 to $40 billion in 1975 and $85 billion in 1980, measured in 1978 prices. The developed countries as a whole adjusted relatively rapidly to the first oil shcok. The industrial market economies shifted to deficit after 1973 but regained a surplus by 1975; the centrally planned economies excluding China had a $9 billion deficit in 1975, but reached a trade balance by 1978. The overall deficit, in sum, fell most heavily on the oil-importing and non-surplus oil-exporting developing countries. These countries' deficit increased from $18 billion to $53 billion in 1975, and $43 billion in 1978.

Arms sale played a significant role in this triangular process of adjustment, at least for the few countries which account for almost all arms exports. The estimated value of developed countries' net arms exports to the rest of the world increased from $6.3 billion in 1970 (measured in 1978 prices) to over $16 billion a year from the United States and Soviet Union. This was equivalent to over half of the developed countries' total current account surplus.

Arms exports assumed a financial importance in the process of "recycling" oil revenues which exceeded their overall economic weight. In 1977-79 the developed countries' arms exports to the rest of the world amounted to less than 2 percent of their total exports. Developing countries' arms imports were worth less than, for example, remitances from these countries' emigrant workers. Yet the rapid increase in the arms trade magnified its consequences. In the 'resolution' of the second oil shock of 1979, arms exports may pay a comparable role. Once again, the non-surplus developing countries appear to be increasing substantially in the early 1980s as they did in 1974-75.

But conditions in the world economy are in several respects even more dangerous than they were in the mid-1970s. The developing countries were then able to increase their imports of arms and other goods from developed countries--because their own export earning increased, because of greater foreign aid from developed and oil-exporting countries, and because many of the middle- and higher-income developing countries contracted large commercial loans. This process of adjustment avoided financial crises, and also helped to maintain economic growth in both developing and develped countries.

Such adjustment seems less likely in 1982. The prices of primary commodities exported by developing countries have declined sharply, and their exports of manufactured goods are threatened by recession and protectionist pressures. Developed and oil-exporting countries--their own finances squeezed by slower growth and increased domestic public spending, including military spending--seem unwilling to increase substantially their foreign aid. Continuing high interest rates have reduced the commercial borrowing of many developing countries, and increased the burden of existing debt. In 1981, even before the full effects of high interest rates became felt, the total volume of world trade actually fell for the first time since the 1950s.

The foreign exchange burden of arms imports is even greater under these circumstances than it was in the mid-1970s. The longer-term costs are correspondingly more serious—in reduced investment, reduced prospects for future export earnings, and worsened insecurity in the world economy.

The costs of military spending

Military spending is a charge on the economic future of all countries, the richest and the poorest, those who import and those who export arms, the East and the West. Its economic consequences are in certain respects similar in the most diverse countries. Everywhere, it demands resources which are already scarce and which are becoming yet more scarce in the early 1930s.

The economic benefits of military spending are trivial in comparison with its economic costs. Military expansion will not stimulate full employment as it did in the 1940s. If it competes for scarce government finances with social expenditures it is likely, instead, to reduce employment. It carries the risk of worsened inflation. Many of the jobs it creates, in all the countries which buy or sell sophisticatd weapons, are for scarce scientific or skilled workers.

A military expansion that is concentrated in the procurement of advanced weapons and military research, is also likely to reduce future economic growth. In developed and developing countries, both centrally planned and market economies, military spending appears to reduce investment in productive capacity, or in facilities such as hospitals and schools. It imposes heavy burden on Eastern economies whose labor force is growing only slowly. Military research and training can provide incidental or spin-off benefits for civil society, but these are less than would be achieved from direct investment in civilian research. Many countries, too, have some form of dual economic structure in which a modern industrial sector (in developing countries) or with a growing sector providing social and other "unproductive" services. In such countries, a sophisticated military effort makes disproportionately great demands on the modern industrial sector, causing further structural difficulties.

The importance of such costs varies immensely from country to country. There are some eighteen countries who consistently spend less than 1.5 percent of their national income on the military. These countries avoid most direct military costs. (The countries include Austria, Bangladesh, Costa Rica, Fiji, Finland, Hong Kong, Ivory Coast, Jamaica, Japan, Liberia, Luxemburg, Mauritania, Mexico, Nepal, Panama, Sierra Leone, Sri Lanka and Trinidad.) Yet no country is free from the economic consequences of worldwide military spending. For the waste and distortion of human effort involved in modern military competition threatens the security of countries collectively as well as individually.

The principle of common security which underlies this Report asserts that countries can only find security in cooperation and not at each other's expense. This principle applies to economic as well as to military security. Countries are joined together by economic interdependence as well as by the threat of destruction. All countries are hurt if military spending reduces the economic well-being of major participants in the world economy. All are hurt if military demands on government finances limit aid or commercial lending to developing countries. Economic recovery requires a common effort to increase trade. Without economic recovery there is no hope for common security -- for the common prosperity which is the basis of security itself.

NOTES

[1] The information available about the composition of military expenditure is limited and unsatisfactory. Countries publish vastly different amounts of information in vastly different forms. The use made of available statistics is also inadequate, even in relation to the economic importance of military expenditure in industrial countries. There is little economic analysis of the military sector and its effects on the overall economy. In what follows, statistics for military expenditure are taken from the Stockholm International Peace Research Institute (SIPRI) Yearbook for 1982 and earlier years. SIPRI totals vary in some cases from totals given in nations sources.

[2] Official Soviet sources show a decline in military expenditure as a share of national income from 15.4 percent in 1950 to 6.5 percent in 1960, 6.3 percent in 1970, 4.7 percent in 1975, 4.4 percent in 1976. 4.1 percent in 1977, 4 percent in 1978 and 3.9 percent in 1979 ("Narodnoe Khozyastvo SSSR v 1967-1980," Pravda, January 24, 1982).

[3] In the United Kingdom, according to official national accounts, the share of military and civilian wages and salaries fell from 48 percent of military expenditure in 1976 to 42 percent in 1980. In Japan, the share of "personnel and provisions" decline from 56 percent to 49 percent in 1980.

[4] Military demand is sharply different from other components of final demand, as detailed studies of "input-output" relationships for the United States, Canada, France, and the United Kingdom show. While military demand is concentrated in mechanical and electronic goods, nonmilitary public demand is centered in construction and services, and private consumption is distributed across such industries as food, services, housing, motor vehicles, restaurants.

[5] Such is the conclusion of the few empirical studies of military employment--which are in general based on input-output information for the U.S. and France in the 1950s and 1960s. See, for example, Wassily Leontief and Marvin Hoffenberg, "The Economic Impact of Disarmament." Scientific American, April 1961, Vol. 204, No. 4, pp. 47-55. These studies, and the discussion which follows, do not take into account "multiplier" effects associated with expenditures which follow initial outlays as wages and profits earned in military or non-military activities are spent on further consumption.

[6] U.S. Department of Labor, Bureau of Labor Statistics. "Projections of the Post-Vietnam Economy, 1975" (1972).

[7] Calculated on the basis of statistics in Jacques Aben: "Desarmament, Activite et Emploi," in Defense Nationale, May 1981, pp.105-23. France, of course, has a system of national military service with low payments to servicemen. But expenditure on permanent defense personnel alone also created substantially more jobs--29,240 per billion francs--than expenditure on other military purchases; expenditure on conscripts created over 150,000 jobs per billion francs.

[8] Max A. Rutzick: "Skills and Location of Defense-Related Workers," U.S. Department of Labor: Monthly labor review, February 1970, pp.11--16.

[9] United Nations General Assembly: Study on the Relationship between Disarmament and Development, A/36/356, October 5, 1981.

[10] United Nations General Assembly: Study on the Relationship between Disarmament and Development, A/36/356, October 5, 1981, p.85.

[11] Abraham S. Becker: "The Burden of Soviet Defense" (RAND, R-2752-AF, October 1981), citing studies of the Soviet economy made at Stanford University.

[12] In the United States, for example, military purchases in 1972 accounted for 3.3 percent of total final demand, 5.6 percent of final demand from goods-producing industries, and 13.6 percent of final demand from metal products industries, including mechanical and electronics industries. See Emma Rothschild: "Military Expenditure Structure," paper prepared for the Independent Commission on Dismarmament and Security Issues.

[13] Technical Change and Economic Policy (OECD, 1980), pp.30, 68, OECD Science and Technology Indicators. Basic Statistical Series, volume B, January 1982.

[14] Statistics on arms transfers taken from U.S. Arms Control and Disarmament Agency: World Military Expenditures and Arms Transfers, Washington, D.C., 1982

[15] Lance Taylor: "Military Economics in the Third World," paper prepared for the Independent Commission on Disarmament and Security Issues. Taylor's econometric findings call into question a well-known study (Emile Benoit: Defense and Economic Growth in Developing Countries, 1973) which on the basis of earlier data for a smaller sample of countries found a positive relationship between defense spending and economic growth.

excerpts from SOUTH MAGAZINE

"The Hidden Costs of the Arms Race" (Editorial), "The Myth of the 'Man on Horseback'" and "Weapons Go Where the Money Is," South, July 1982, pp. 7, 10-13.

THE HIDDEN COSTS OF THE ARMS RACE

Once again the issue of disarmament is before a Special Session of the United Nations General Assembly. Familiar arguments will be rehearsed, with world leaders pledging themselves to peace and an end to the arms race. Chilling statistics will be marshalled to show how the world is galloping toward disaster, highly persuasive arguments and formulations used by the Palme Commission will be recalled, and many proposals tabled to take a thin slice from the arms cake to provide half a meal for the poorest of the poor in the Third World. Once again the session will adjourn after adopting some anodyne resolutions.

For years now the Stockholm International Peace Research Institute (SIPRI) and Ruth Leger Sivard's studies on world military and social expenditure have been engaged in collecting fact and figures, and analysing them with painstaking care to show how the resources of the world are being used to stockpile weapons of destruction capable of turning mankind into a whiff of smoke.

There is a growing grassroot movement in the United States and in Western Europe, which is demanding a nuclear freeze and unilateral disarmament. Major nations are discovering that theories of deterrence and mutual arms destruction have only sharpened mutual distrust and hostility.

It is now being recognised that the very existence of nuclear military capacity is a grave threat and that steps must be taken to dismantle nuclear weapons, by agreement if possible, unilaterally if necessary. The period of detente was used by both superpowers to amass more sophisticated and lethal weapons. It is now being urged that if deterrence has not worked, unilateral disarmament might. If one side decides to reduce the threat of war, the other side might reciprocate. This is dismissed by the military establishment as too idealistic, the moment one side disarms it will be subjugated by the other.

At least the issue is being debated in the North (East and West), but there is little evidence of any consciousness of the problem in the Third World. Most developing countries, particularly those which have the resources, are preoccupied with the acquisition of weapons, and build up armed forces with the dedication of converts. The people, at least the more articulate classes, in the developing countries have come to believe that their security and future depend entirely on having a large and well-equipped army, whatever the cost.

Indeed, it is unpatriotic to question how much is being spent on defence. Security and armed forces have become synonymous and even in countries where there is a relatively free parliament the military budget receives only a perfunctory and respectful scrutiny. In countries under military rule the defence budget remains a mystery, and whatever is made public is often incomplete and unreliable. Any suggestion that expenditure on the armed forces should be reduced is dismissed as being enemy inspired.

It is recognised that the process of development could be accelerated if some of the military expenditure were diverted to the social sector but it is considered highly injudicious, if not treasonable, to weaken the defence services.

Has any Third World country successfully pre-empted aggression by setting up a large and powerful standing army? The question is never asked. Has any country acquired a greater sense of security by devoting a large proportion of its resoures to the defence services? The question is never answered.

More suprisingly, few people—politicians, academics and journalists in the Third World--pause to reflect whether their armies and armaments genuinely serve their national needs, or whether they are there to defend or advance the strategic interests of the superpowers. Andrew Pierre, author of Global Politics of Arms Sales, 1982, says: "The arms sales have become, more than ever before, a crucial dimension of world politics...arms sales are foreign policy writ large."

The arms supplied to the developing countries are a substitute for diplomacy. To quote Andrew Pierre again: "At a time when major powers are less likely to intervene with their own armed forces, they are more prone to shore up friendly states through the provision of arms or to play out their own competition through the arming of their proxies". In the arms race Third World countries have been assigned a permanent proxy role.

The East-West conflict will not be resolved through war. In a recent article (Foreign Policy, Spring 1982) the French minister for cooperation and development, Jean-Pierre Cot, said that the terms of the Yalta Agreement had been consolidated and would not be substantially modified for a long time: "The arms build-up itself cannot change this picture."

He recalled two lessons of recent history: the most formidable display of power in the world was not quite enough in South Vietnam or in Iran during the hostage rescue operation. Explaining the official French position, he said that strategic answers must not be equated only with military answers, and that it was inadvisable to ask the developing countries to align with one side or the other.

In the following pages, South attempts to study some of the more important facets of military expenditure in the Third World.

The use of oil wealth to import arms suggests that the dramatic and unparalleled increase in military expenditure in the Middle East during 1974-82 occured because of a sudden increase in wealth, and not in response to any significant change in the security of the region. Alexander Haig's advocacy of "strategic consensus" helped transfer the US perception of the Soviet threat to its vital interests to the oil-rich countries of the

region. The US $8.5 billion AWACS deal was supported by a former US ambassador to Saudi Arabia on the ground that it would give the United States a "flying base in the region and the Saudis would have the privilege of paying for it."

The social and political effects of the arms race in the Third World indicate that much of the military expenditure there is at the cost of development. Many myths persist about military expenditure as a source of economic growth and modernisation. All these myths are without substance.

Both the rulers and the ruled in the Third World should acquaint themselves with certain important facts about military expenditures which are rarely discussed openly. They should at least ask whether militarisation provides a safe route to security, or whether it is all a mirage. The people have a right to know how the wealth of the nation is being spent. Military expenditure must be subjected to detailed public scrutiny. Military rulers will resist this, but a right does not disappear because it is denied. The need for a reasonable amount of defence expenditure is not denied: genuine defence needs should be realistically assessed and provided for. Beyond that, every penny spent on defence, it must be realised, is at the expense of the people; their health, education and development.

Military expenditure in the Third World should be frozen at its present level and no new weapon systems imported. The emphasis should shift to mobilising the people, through education, to defend themselves and their rights.

—Altaf Gauhar, Editor in Chief
South Magazine

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THE MYTH OF THE "MAN ON HORSEBACK"

How did the arms-race start in the Third World? There are several reasons, but to mention a few:

* Decolonisation left boundary disputes arising from the partitioning of regions, sub-continents and countries. India and Pakistan have fought three wars over Kashmir since independence; the McMahon Line between India and China (1914) led to a clash in 1962 and the Durand line is a source of constant friction between Pakistan and Afghanistan. There have also been conflicts over North-South Yemen, North-South Korea, North-South Vietnam, Taiwan and the People's Republic of China, Israel and the Arabs, South Africa and the neighbouring African states, Somalia and Ethiopia, Algeria and Morocco, Indonesia and Malaysia, Turkey and Greece.

* The colonies were ruthlessly disarmed and only members of the colonial army could bear arms. Under the Brussels Act 1890 no arms could be supplied to the African states although the prohibition did not apply to white settlers and colonial armies. This was reaffirmed in the St. Germain convention of 1920. The absence of a national armoury justified post-independence policies.

* After the Yalta Agreement the superpowers swiftly established zones of influence and developing countries were called upon to line up behind their patrons. Once drawn into regional defence pacts and treaties, Third World countries quickly built up large armies and vast arsenals initially acquired through concessionary, often free, military

assistance programmes but eventually maintained by diverting a substantial part of their national resources to the military sector. Third World presidents and generals used their status as allies to consolidate their own positions: any threat to their survival was a threat to the alliance.

* The United States developed what John Girling calls "the undifferentiated global approach" to deal with the communist threat. In 1952 President Truman found much of Asia "under communist attack." To him the loss of any country in the region meant "the loss of freedom for millions of people, the loss of vital raw materials, the loss of points of critical strategic importance to the free world." (America and the Third World, John Ellis Girling, Routledge & Keegan Paul, London 1980, p.132). The presentation of the communist threat to the Third World resulted in powerful military establishments and later military regimes in many developing countires.

* Most of the potential conflict areas in the Third World witnessed major power intervention between 1947-78 resulting in rapid increase in arms imports and military expenditure.

* In the 1950s and 1960s Western political scientists and economists spotted the armed forces in the developing countries as the most appropriate and powerful agents of modernisation. 'The man on horseback' became the most logical ally for Western policy makers. Guns are heady wine and soldiers are seen as potential 'martyrs' by the ordinary people and armies as symbols of national pride. Hence the people are easily persuaded to undergo any sacrifice to raise as large and well-equiped an armed force as possible

Here are some facts from "World Armaments & Disarmament" (Stockholm International Peace Research Institute, Yearbook 1981, Taylor & Francis Ltd., London 1981) (World Priorities, Box 1003, Leesburg, Virginia 22075, USA).

A: There were some 25 million men in the regular armies in the world in 1980 (excluding 45 million in paramilitary and reserve units). Of these, over 15 million belong to the Third World. And the ratio, as the numbers, is on the increase!

B: Between 1950 and 1980 more than 411,000 of these men received military training in the USA, mostly from Asia and Latin American. The Soviet Union trained 43,000 men from the Middle East and Africa between 1955 and 1979.

C: There are some 126 countries in the Third World. At the last count 56 were under direct military rule. There were two coups on 25 March 1982, in Bangladesh and Guatemala. Approximately three-quarters of the men who received their military training in the USA and the USSR belong to those countries which have witnessed 81 coups since 1960. Possibly a coincidence, probably a cause.

D: The world spends US $550 billion annually on arms. The share of the Third World excluding the People's Republic of China is approximately US $83 billion, almost double the amount in 1971. The chart on page 12 shows the spread of world military expenditure.

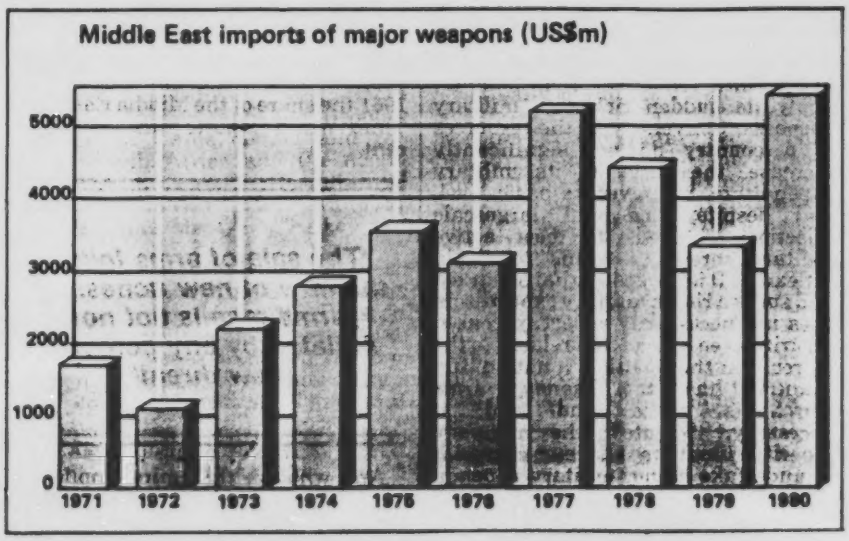
E: Roughly 75% of the global trade in major conventional weapons during the 1970s consisted of deliveries from the industrialised countries to the Third World. The Middle East received 48 percent of all Third World imports.

Notice the four-fold increase in the military expenditure of the OPEC countries, while the USA substantially reduced its military expenditure.

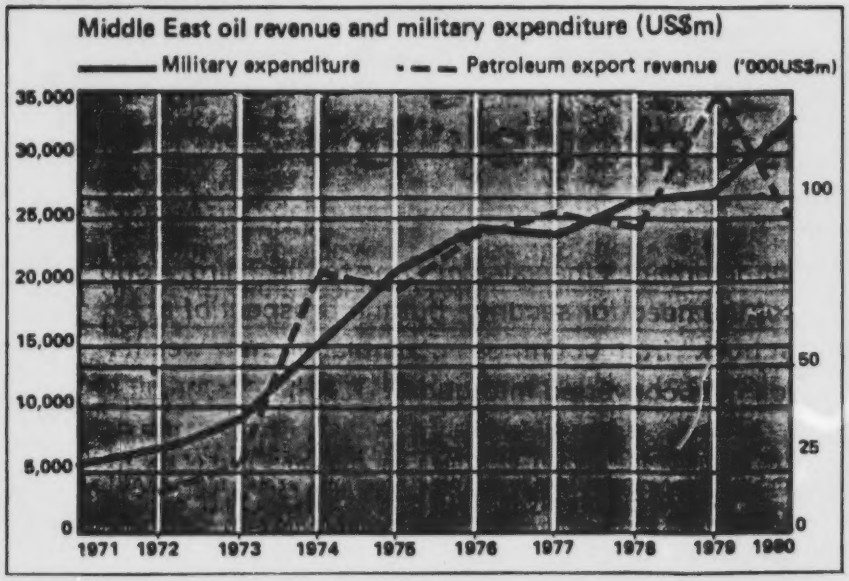
WEAPONS GO WHERE THE MONEY IS

This phenomenal growth of arms and military expenditure in the developing countries is usually justified on political and strategic grounds but the obvious correlation between the wealth of a country and its propensity (or compulsion) to spend that wealth on arms is often ignored. To put it bluntly: political and strategic conditions remaining the same, a country coming into wealth tends to (or is made to) apply its sudden riches to military purposes. Conversely, if the resources of a country do not significantly increase, the curve of its military expenditure, whatever its basic level, and despite occasional large scale injection of funds to meet active military threats, remains relatively inflexible. It is suggested that a marked and sudden rise in military expenditure does not necessarily reflect increased security needs: it is often related to the increase in the wealth of a nation. If a country has the money, arms merchants would find and, if necessary, "create" the requisite security climate to induce or compel it to undertake higher military expenditures and higher arms imports. Indeed, the arms merchants "create" not only the requisite security climate to suit their marketing strategy, they also play hard to get. Nations coming into wealth are seen begging for arms while reluctant sellers explain how difficult it is for them to part with sophisticated weapons: the regional balance will be upset, there will be an uproar in the Senate, Congressman X will lose his shirt, etc.

To illustrate, take the Middle East, which saw a sharp increase in its income due to a rise in oil prices in the seventies. The value of major weapons imported in the region was US $196 million in 1961. By 1980 the value had risen to a stagering US $5,414 million, registering an increase of--hold on—over 2,762 percent! The five year moving average shot up from US $327 million to US $4,312 million. Can one explain this massive increase, to which there was no parallel in any other part of the world during the period, except in terms of the oil-wealth which the manufacturers of military weapons decided to appropriate? Admittedly tensions were created, even crises unleashed, but they were part of the West's high-pressure arms marketing strategy. Two decades of profligate arms spending did not resolve any dispute in the region, nor did any country acquire a greater sense of security. All that happened was that oil was converted into guns.



Cost of a soldier



The Middle East received 60 per cent of all Third World imports between 1960-1980. In 1961 the share of the Middle East in all Third World imports was only 16 percent.

Most of these exports are directed to the oil producing countries with high incomes and surpluses, particularly the Arabs. According to one report, 90 percent of all Soviet arms sales are now in the Arab world. But the Soviets and their socialist allies play a minor role in the export of arms, which is primarily a western affair, as shown below. Take the major suppliers to the oil producing countries in the Middle East.

The US: It had a 45 per cent share in the exports of major weapons to the Third World, 1970-79. The total value of its major-weapon exports between 1977-80 was US $24.8 billion. Over 60 percent of these exports went to the Third World with Iran as the single largest buyer. All policies of restraint where jettisoned when the oil wealth appeared and the US arms industry started leaning heavily on the administration and many restrictions on US arms sales were removed or relaxed.

The Soviet Union: 27.5 percent of major weapons exported to the Third World originated in the Soviet Union, making it the world's second largest supplier of major arms. According to a CIA report published in December 1980, almost 90 percent of all Soviet arms sales were to the Arab world. Iraq, Syria, Algeria, Libya and South Yemen were the biggest customers. The Soviet Union sold arms worth US $2,500 million in 1978. This figure increased to US $8,400 million in 1979. Again, the bulk of the arms went to the oil producing Arab countires.

France: Between 1977-80, 76.5 percent of all French exports of arms went to the Third World, meeting a quarter of the country's bill for oil imports. In 1976 France exported arms worth US $2,500 million. By 1980 the figure had risen to US $5,200 million, a fourfold increase at constant 1968 prices, and twice as fast as the overall growth rate of French exports. Before the oil-price rise in 1973, two-thirds of French major arms went to other industrialised nations but when the oil money appeared,

90 percent of French exports were directed to the Arabs--Saudi Arabia, Iraq, Libya and the United Arab Emirates. The French never pretended that they supplied arms to meet security needs: they sold where there was money and that was how France became the world's third largest arms seller moving ahead of the United Kingdom.

Italy: Between 1977-78, 76.6 percent of Italy's arms exports went to the Third World with Egypt and Libya among its single largest customers.

UK: During the same period $1.7 percent of all major weapons exported by the UK went to the Third World, and most of these were paid for in oil-money.

Federal Republic of Germany: There was a growing pressure on the government that the foreign ministry should not define "areas of tension" to which arms exports were in principle prohibited. West Germany's Leopold-2 battle tank was one of the principle items of exports to Egypt, Libya, UAE, Kuwait. Germany's share of total arms exports was 2.3 percent, a large portion of which went to the Third World.

Canada: Over 98 percent of Canada's arms exports are to Third World countries.

Sweden: 50 percent of Swedish arms are exported to Third World countries.

SIPRI's second chart is even more revealing and instructive. It shows the world military expenditure between 1971 and 1980 in the Middle East region. The curve of expenditure appears to have a direct correlation with the oil income of the countries (see oil exports revenue figure) without any significant variation in the security situation.

There are 15 countries in the region, some volatile in security terms and some non-volatile. Yet their military expenditure graph appears to have no relationship to their security needs. Israel is the great security problem in the region, yet its military expenditure curve, however high its basic level, has remained relatively inelastic between 1971 and 1980.

Israel's total military expenditure in 1971 was US $2,166 million and in 1980 it was US $2,218 million at constant prices. It rose to US $3,880 million in 1973 but then dropped to a little over US $2,000 million. To repeat, one is not talking of the level of military expenditure which may be high or low. The Israelis were armed to the teeth by 1960--what one is trying to establish is that the curve of expenditure in Israel did not rise because there was no significant rise in its national income, while security conditions remained the same. Since there was no sudden or substantial increase in Israel's income between 1971 and 1980 its military expenditure remained constant.

Another volatile country is Egypt--a front line state in the Israel-Arab conflict. Egypt's military expenditure should have shown a significant increase as its security risks increased. But the figures show a steady trend since there was no significant addition to Egypt's income even though it went through a period of actual warfare. Egypt's military expenditure was US $2,972 million in 1971 and in 1979 it was US $2,790 million. In between it rose to US $5,972 million in 1974 but then dropped to what might be called its real national level.

Another front line country is Jordan and it has been in a constant state of conflict with Israel and also with Syria. Jordan's military expenditure in 1971 was US $270 million and rose to US $323 million in 1979. The pattern remained uniform as there was no significant change in national income.

The same applies to Lebanon which has no oil-wealth but has been in a state of siege and war for the last 10 years. The country's military expenditure was US $120 million in 1971 and rose to US $200 million in 1979. Compare these figures with those of the non-volatile countries, countries with large surplus incomes in region.

The United Arab Emirates face no direct security threat. Yet their military expenditure rose from US $13.3 million (1973) to US $1,162 million (1980). They came into great wealth in 1974 and a significant proportion of it went into military expenditure.

Kuwait has no security problem, Kuwait's military expenditure was US $388 million in 1971, it rose to US $1,244 million in 1977 and stood at US $1,179 in 1980 (SIPRI--1982 at 1979 prices).

Iran faced no external security threat under the Shah but there was sudden and substantial increase in its oil-revenue. Iran's military expenditure was US $1,810 million in 1971 and it rose to US $10,557 million by 1976.

By far the richest country in the region is Saudi Arabia. Also a country which has not been directly involved in any conflict between 1971-80 nor does it face any external security threat. Its military expenditure in 1971 was US $2,006 million, as high as that of Iran and Israel. It rose to US $18,514 (an increase of over 900 percent) by 1980. Today Saudi Arabia's military expenditure is more that 50 percent of the military expenditure of the region as a whole.

Further reading: In his book, The Arms Bazaar (Coronet Books 1977), Anthony Sampson quotes Stephen Spender: "The guns spell money's ultimate reason" and relies on Bernard Shaw's "Major Barbara" to establish that arms are given "to all men who offer an honest respect of persons or principles."

Another point he makes is that "weapons can get out of control and establish their own anarchy" and quotes instances to show that "the arms that major powers had originally supplied to one country for one purpose were used by another country for an opposite purpose: guns and countries changed sides in a few months, while the super-powers would not or could not intervene."

Sampson notices that the sale of arms followed the flow of new riches into the Middle East. Arms went wherever the money was. Between 1968 and '72, European countries sold arms to Latin America worth over US $1.2 billion. Meanwhile, the US arms companies were working hard behind the scenes, particularly on Brazil, the fastest-growing market of all, which had both the military government and a boom economy.

US government arms sales averaged US $1.5 billion in 1974—exactly the period when the oil income rose.

The Soviet deliveries to Third World countries also increased to US $1.2 billion a year in the late 1970's.

Sampson writes: "The arms race in the Middle East was not initiated by any perceived new threat from the East but by the commercial opportunities coinciding with the diplomacy of the Nixon Doctrine and the Britsh retreat from the Persian (or Arabian) Gulf which had resulted in a general loss of control over arms sales."

III. ARMS TRADE AND PRODUCTION

Proliferation and Trade: The Transfer of Arms to Third World Countries and Their Internal Uses
- Asbjorn Eide

Transnational Military Corporations: The Main Problems
- Helena Tuomi

The Iron Triangle
- Gordon Adams and Geoff Quinn

The arms trade has continued very buoyant right through the world recession, and in the last decade has outpaced the volume of world trade in general by a wide margin. There is little prospect of any kind of restraint on the international trade in arms.

– SIPRI

Stockholm International
Peace Research Institute

This section explores the political and economic implications of arms trade and production. Asbjorn Eide examines the historical background of the militarization of developing countries and in turn lays the responsibility for this phenomenon at the feet of big power politics and cold war conflict.

One hundred years ago military production was national in character. Today, arms production is truly a "transnational affair". The implications of this evolution are explored in the adaptation from Helena Tuomi's book, "Militarization and Arms Production". The relationship between different arms of government and private industry in determining military spending levels is described in "The Iron Triangle", by Gordon Adams and Geoff Quinn.

PROLIFERATION AND TRADE: THE TRANSFER OF ARMS TO THIRD WORLD COUNTRIES AND THEIR INTERNAL USES

"Proliferation and Trade: The Transfer of Arms to Third World Countries and Their Internal Uses," Asbjorn Eide. International Social Science Journal, Vol XXVI, No. 1, 1974.

Introduction: the end of the monopoly stage of violence

This article should start with an apology. One of Africa's most outstanding political scientists once observed, paraphrasing a famous dictum by Lenin, that imperialism was the monopoly stage of violence.[1] During the period in which Europe and North America underwent a technological revolution which also brought about tremendous changes in armament technology, most of what is now called the Third World was brought under colonial control and prevented from obtaining its own armaments. Not many decades ago, it was still prevailing opinion in the industrialized countries that the rest of the world should be kept disarmed. Surprisingly, the notion seems to have been widespread that the white race was more responsible and more able to control its weaponry than the peoples of Africa and Asia. Already before the outbreak of the second World War, Kenyatta had the following remark to make about this notion:

> "The European prides himself on having done a great service to the Africans by stopping the 'tribal warfares', and says that the Africans ought to thank strong power that has liberated them from their 'constant fear' of being attacked by the neighboring war-like tribes. But consider the difference between the method and motive employed in the so-called savage tribal warfares and those employed in the modern warfare waged by the 'civilized' tribes of Europe and in which the Africans who have no part in their quarrel are forced to defend so-called democracy."[2]

The intention of this article is therefore to argue that the Third World is not inherently less capable of controlling their weaponry than the industrialized world, and hence not less entitled to have armed forces. What will be stressed is that there are a number of negative consequences which are and will be experienced by the Third World in seeking to militarize by developing armed forces through the acquisition of 'modern' military technology.

The vast majority of Third World countries would benefit infinitely more by maintaining a relatively modest and technologically simple army while at the same time insisting at international forums on the achievement of comprehensive and general disarmament through which the industrialized States also dismantle the military machineries which they have erected. If such world-wide disarmament is not obtained, there will be no way of halting the militarization of the Third World, whatever negative consequences one may be able to point to in advance.

The effort to maintain a monopoly of violence by the European powers found expression several times during the nineteenth century, in which efforts were made to prohibit transfers of arms to Africa and parts of Asia. The declared intention was to prevent what were called 'tribal wars', but the effect was that the Third World peoples were unable to resist colonial occupation. Of particular interest is the Brussels Act adopted by an international conference in 1890, regulating the export of arms to Africa. The prohibitions are found in Article VIII of the Act, which it is illuminating to quote verbatim:

> "The experience of all nations that have intercourse with Africa having shown the pernicious and preponderating part played by firearms in operations connected with the slave trade as well as internal wars between the native tribes; and this same experience having clearly proved that the preservation of the African population whose existence it is the express wish of the powers to protect, is a radical impossibility, if measures restricting the trade in firearms and ammunition are not adopted, the powers decide, so far as the present state of their frontiers permit, that the importation of firearms, and especially of rifles and improved weapons, as well as of powder, ball and cartridges, is, except in the cases and under the condition provided for in the following Article, prohibited in territories comprised between the 20th parallel of North latitude and the 22nd parallel of South latitude, and extending westward to the Atlantic Ocean and eastward to the Indian Ocean and its dependencies, including the islands adjacent to the coast within 100 nautical miles from the shore."[3]

The hypocrisy of this justification is not difficult to detect. The Act was the culmination of regulations applied by individual European governments, to prevent the transfer of arms to the various small African States which over a large part of the nineteenth century maintained independence on the territory which now forms the Union of South Africa. Since there was no similar prevention of transfer to the white settlers and the colonial army, this policy was a major factor in facilitating racial domination.

Efforts in the same direction were still being made after the First World War, including the Saint Germain convention of 1920, which prohibited the transfer of weapons to the whole of Africa except Algeria--then under French occupation—Libya, and Union of South Africa.[4]

It should be noted that these efforts were made during a period which coincided with severe and brutal colonial warfare in several parts of Africa and Asia. Mention could be made of the German war of extermination in South West Africa at the beginning of this century, or Portuguese warfare in Angola which lasted at least until 1919 before full colonial control was established.

It was the Second World War which gave the first major impetus to militarization of the Third World. As reflected in the statement by Kenyatta quoted above, the driving force was the interest of industrialized countries to utilize manpower from the Third World in the massively violent confrontation between the industrialized powers which took place from 1939 to 1945.[5] Such efforts were made in different parts of the world. After its occupation of Dutch East India, Japan armed Indonesian nationalists. In the Indian subcontinent, armament was carried out by the United Kingdom, and the French and British set up armed forces in several parts of Africa. This process was intensified after the Second World War, and initially very much related to the cold war

confrontation. The West sought to build a collective security system consisting of a chain of military alliances bordering the Soviet Union and China. The countries bordering the two major socialist countries were designated as "forward defence areas' and received three-quarters of major weapons exports by the United States to Third World countries. This heavy militarization culminated in the formation of SEATO and the Baghdad Pact, later to become CENTO, in 1955. Bilateral mutual defence treaties were established with other countries in the area. Similarly, in the Middle East, military assistance was provided partly in order to persuade countries to join the Western collective security arrangement.[6]

During this early period, practically no transfers took place from the Soviet Union except to China, the Democratic People's Republic of Korea and later to the Democratic Republic of Vietnam.

The weapons transferred by the United States to the forward defence area were intended for military confrontation with the socialist countries. Several of the recipient governments, however, joined into these collective security arrangements mainly in order to develop their capacity for fighting local international conflicts and for purposes of internal control.[7]

Armament transfers from the Soviet Union experienced their first major increase from 1955. The first area to be supplied was the Middle East, where the objective mainly was to resist the efforts of the West to organize an anti-Soviet military alliance. Later on, the transfers by the Soviet Union became increasingly related to the conflict between Israel and the Arab countries, in which the Soviet Union catered for the weapon demands of several Arab countries.

Thus, the militarization of certain Third World countries during the Second World War and up to 1960 was mainly caused by major industrialized countries for their own strategic interests. The consequences of this militarization for the recipient countries was hardly given much attention.

A part of the fading monopoly of violence was the system of military bases. The origin of this system can be found in the formation of colonial empires. Trading posts were established, in turn leading to fortification, and gradually a chain of bases were established by the major colonial powers throughout Africa and Asia and on islands in between. The competition and sometimes violent confrontation between the colonial metropolises (in particular the United Kingdom and France) intensified the need for such bases. Nations of geo-politics formed central parts of the justification of these bases. Inherent in geo-political notions is the assumption that major industrialized countries are entitled, for their own strategic interests, to police overseas. With the advent and growth of air forces, the need for air bases became dominant. During the Second World War, in particular as a consequence of the war between Japan and the United States, a farflung system of air bases was created and much of it maintained after the end of the war. These bases were planned for two purposes: partly to protect all possible air routes to the United States through the overseas basing of defensive fighters, and for deterrence with bases close enough to all potential enemies so that bombers could reach targets within the strategic heartland of any potential adversary.[8]

Thus, the two decades beginning with the Second World War and ending 1960 were characterized by a proliferation of weapons throughout the Third World, but mainly contained within a system of control by the major industrialized countries, directly (in the form of bases) and indirectly (in the form of collective security arrangements).

By 1960, therefore, the monopoly of violence held by some few industrialzied countries was being weakened, while still not seriously challenged.

Current changes

During the past fifteen years, important changes have taken place, among which the following seem to be the most important here.

On one hand, the orientation of military assistance from the west (and in particular the United States) has changed. The focus is no longer on collective defence and the deterrence of external attacks, but has increasingly concentrated on internal control in Third World countries. At the beginning of the 1960s, the assumption was that this had to a large extent be carried out through direct military intervention. Towards the end of the decade there was a change of emphasis towards strengthening the capacity of the police and the military of the Third World for local control by their own forces, but with equipment and training from outside.

Another change has been a substantially increased military assistance by the Soviet Union to a wider number of states, and also increasing support to liberation movements. This support has gone, in particular, to movements in southern Arica and in Indo-China through the Democratic Republic of Viet-Nam.

The third, and probably most important change has been the increasing assertion of autonomy in the use of the armed forces by the governments of many Third World countries.

The emphasis on internal uses of the armed forces had already been a dominant feature in the colonial wars since 1945. Dutch actions in Indonesia, French wars in Indo-China, and later in Algeria, the British in Malaya, and--much later--Portuguese warfare in its African colonies all had this in common: the use of force was not for the purpose of defence against external attack (which would have been legitimate under the United Nations charter), but designed to maintain established control and to resist the struggle for self-determination. At the beginning of the 1960s, the internal use of armed force became a more accepted doctrine under the name of 'counter-insurgency.' It evolved, in particular, as part of the doctrine of flexible response adopted by the United States during the administration of President Kennedy. Part of this strategy was the effort to provide the United States military establishment with a 'rapid response' capability allowing for deployment of United States troops on the guerilla battlefield at the first sign of an insurgent uprising.[9] Several requirements arose from this: an extended network of military bases, the construction of giant transport aircraft, fast supply ships, and a wide range of other weapon developments.

This doctrine, in its original form, ran its full course in the Indo-China war which saw the widest range of counter-insurgency weapons ever deployed on any battlefield. However, it ended in ultimate disaster. Developments took a different turn in other parts of the world, particularly in Latin America. At an early stage of the counter-insurgency programmes, it was found desirable to equip and train the internal military and police forces rather than to prepare for direct external intervention. Under the Military Assistance programme (MAP), the forces responsible for maintenance of internal security were to be subsidized. These ideas, initially developed in the early 1960s as a consequence of experiences in Viet-Nam, found their place into the Military Assistance Programme from 1963 onwards. The programme became intensified after the visit of Rockefeller to Latin America, where he encountered

considerable turbulence.[10] His evaluation of the unrest was that there was a need for stronger government. He claimed that pluralistic forms of government would often be incapable of maintaining the proper balance between development and stability in nations undergoing the process of modernization. The question, he argued, was less one of democracy or lack of it, than of an orderly way of doing things. He argued that the United States should learn to live with the military strongmen in Latin America, and to understand that a new type of military man was coming to the fore and becoming a major force for constructive social change in the American republics.[11]

In the counter-insurgency programme which followed, military bases were equipped for the gathering of intelligence and for military training, and comprehensive programmes of counter-insurgency training were also set up in the United States itself. In this process, the legitimacy of military intervention in the political systems of Third World countries was actively propagated. Whatever hesitation might have been felt by officers, as a consequence of their traditional professional ethics, was quickly eroded.

At the same time, another process of legitimation was proceeding in a different forum: the struggle for liberation against colonial and racial regimes, particularly in southern Africa, found increasing suppport in the United Nations. In a series of increasingly pointed resolutions, the United Nations organizations legitimized support of the armed struggle of the liberation movements. Such support, in the form of weapons, came mainly from the Soviet Union, and to some extent also from China. These were weapons designed for guerilla forces defending themselves against the counter-insurgency action of the former Portuguese regime of Rhodesia, and South Africa. In the same period, transfers to independent countries also accelerated rapidly.

It is important to note, also, that there has been a change in the nature of the transfers. During the early years, much military equipment was provided free of charge. In the past decade, most of it has been provided on a regular trade basis, which means that the weapons (increasingly expensive because of their sophistication) have to be paid for. This has had serious economic consequences. Countries in which large military establishments were created through gifts (particularly in the so-called 'forward defence areas')had to continue to live with these military establishments even when they had to pay for them. Due both to the local arms races between neighbouring states generated by the militarization, and also to the strength of the military in the political systems of certain countries, it was impossible to undo what had been created. Having to pay for all the weapons, these countries experienced severe economic problems which in turn required the accumulation of a surplus by the groups controlling the state. This surplus had to be obtained from somewhere in society, which led to exploitation and unequal development, which in turn caused serious disruptions in several countries.

Some of the major Third World States, and particularly those with some industrial base, have started their own domestic arms production. In other cases, this is simply part of the present international division of labour, where multinational companies involved in arms production carry out some arms production in Third World countries where the labour is cheaper. In other cases, there is a determined effort by Third World countries to obtain autonomy in armaments from the more industrialized countries of the north. For a number of reasons, this autonomy is almost impossible to obtain: studies carried out so far indicate that technological-dependence continues and may even become itensified as a consequence of domestic arms production.[12]

Nevertheless, the total effect of all these changes is that Third World countries have become relatively more autonomous in their uses of the armed forces than was previously the case. The northern monopoly of violence has been broken.

The Third World accounts for close to 10 per cent of world military expenditures, more than $20 billion annually, which is three times the level of official foreign development assistance. The main suppliers are the two superpowers, the United States and the Soviet Union. However, an increasing number of middle powers are entering into this trade. France is taking an increasing share of it, and other major suppliers are the United Kingdom and the Federal Republic of Germany. In the decade 1963-73 armed forces in Africa and the Middle East increased by 100 per cent, in the East Asia by 50 per cent and in South Asia by 40 per cent.

There remains, however, a very obvious armament hierarchy in the global system. The most sophisticated weapons are controlled by very few states. This applies not only to nuclear armaments technology, but also to a wide range of other major weapons. Practically all such weapons are produced in the industrialized countries. The development of new arms, which require heavy investment and a solid scientific and technological base, takes place almost solely in the United States and the U.S.S.R.. World expenditure on military research and development is concentrated to an extreme degree in few countries. As much as 85 per cent of total military research and development funds are spent by the United States and the U.S.S.R.. Four other countries are involved, but to a much smaller degree, in the development of new weapons: United Kingdom, France, Federal Republic of Germany and China. These countries--and in particular the superpowers--will therefore necessarily remain in the lead in the qualitative arms race and provide the main impetus for armament dynamics.

The accelerating import of weapons and domestic production of armaments nevertheless have changed important aspects of the power relations in the world today. Yet, it is more than doubtful that this new-won capacity to pursue violence is to the benefit of the peoples of the Third World countries themselves. This is the question to which we now turn.

Coercion and social developments: the negative consequences

There is only one fully legitimate function of armed forces. This is to defend a country and its people against external aggression. Other functions are either clearly illegal under present-day international law, or of doubtful legitimacy under the emerging international normative order, in which the protection of human rights forms a central component.

Starting with colonial warfare against peoples oppposing alien domination, the use of armed force in the Third World has to a very large extent been directed inwards and had the main function of repression. A study carried out by Istvan Kende examining all armed conflicts between 1945 and 1969 showed that practically all of them took place in the Third World, and that the vast majority consisted of anti-regime wars with foreign participation mainly on the side of the regime. These were, in his words, wars of independence or class wars (Kende, 1971).

The colonial heritage had left a legacy in certain parts of the world of the need for 'civilized' forces to protect stability against encroaching 'natives' or 'primitive people'. A number of techniques were developed in this context which have found more comprehensive use in our days. Compulsory civilian resettlement, food control,

aerial control, were all elements of this colonial legacy. In particular, the control of civilians has always formed a major part of colonial warfare. In the context of resistance against colonial occupation, there was no clear distinction between civilians and those who joined the armed liberation struggle. Control of civilians by the colonial power aimed at isolation of those joining the liberation struggle, and for this purpose the whole population of the colonial territory was subjected to emergency regulations. Techniques included compulsory transfer of the civilian population into camps or villages which could most easily be described as concentration camps, terrorizing those who did not accept this transfer, food control programmes aimed at preventing the forces of the liberation movements from eating, and having the effect in many cases of subjecting large parts of the civilian population to famine conditions. The introduction of aircraft to back up such policies put greater emphasis on the technological aspects of counter-insurgency warfare: terror attacks against recalcitrant populations became possible over a vast territory. Most recently, the repressive nature of counter-insurgency warfare in a colonial context was displayed by the former Portuguese regime in its African colonies. The creation of aldiamentos, villages that were under continuous surveillance, together with bomb attacks and massacres by heliported troops (Wiriyamu)[13] are present-day manifestations of a strategy which has deep roots in the colonial tradition.

There is one peculiar aspect of the counter-insurgency activities of minority racial regimes, as demonstrated particularly by South Africa: the exceptional visibility of the parties to the conflict. Since the Government of South Africa, entirely based on the white population, pursues a policy of complete racial segregation, this means that all non-whites are actual or potential enemies of the regime. This facilitates surveillance and control by the whites which has also been utilized fully by the South African Government, through a comprehensive system of repressive legislation. It includes the passport laws, narrowly circumscribed freedom of movement for non-whites, the assignment of most of the non-white populations to Bantustans, and the physical segregation of the non-white labour force in the white areas into special quarters or districts. These measures have made it possible, so far, to maintain control largely by the use of paramilitary police. The large and almost completely white armed forces of South Africa, equipped with highly modern weapons, serve mainly as a second-line threat: if resistance to continued racial subjugation should reach proportions which the police is unable to control, the armed forces will be brought into action. If they are however, they will have a simple task: the densely populated and segregated areas of the non-white population, separated from the areas inhabited by the whites, are very easy targets for aircraft and the gunners of the armoured cars. The South African organization of society can, from one perspective, be considered as a long, careful preparation for counter-insurgency warfare.[14]

South Africa, however, is not only preparing for counter-insurgency action within its own territory. Beyond supporting the regime in Rhodesia, and carrying on traditional colonial warfare in the illegally occupied territory of Namibia, South Africa is also posing a threat to its neighbouring countries, the main purpose of which is to deter them from supporting liberation movements. At the time of writing, South Africa has even openly and directly intervened with substantial military forces in the internal movements in southern Angola.

The militarization of South Africa, which started during the period of British colonial administration and developed further as part of the joint imperial defence of which Britain was the centre, has accelerated since 1960 due to the need for internal repression, but has at present reached proportions which has made South Africa into what is sometimes called 'sub-imperial' power.[15] This term refers to major and heavily armed States in the Third World which are able to develop a local hegemony directed against their neighbours. South Africa is not the only sub-imperial power in the Third World; there are others which are even more heavily armed and may in the future pose even more serious threats to surrounding States, but South Africa is the most visible due to its racial policies. For the large majority of Third World States, it is urgent to resist, through international action, the development of sub-imperial powers, otherwise the security of the smaller powers will be increasingly threatened and may force them to undergo a process of militarization, however wasteful and undesirable this may be.

Counter-insurgency operations can sometimes be extremely capital-intensive, which is possible only when major industrialized states are directly involved. The most dramatic proportions were reached during the Indo-Chinese warfare. There are various calculations about the cost of that war, including a per capita expenditure of L700 or, for each of Indo-China's 184 million acres, an expenditure of L170. Other calculations show an incredible L124 per second for the entire eight-year period, or the equivalent in explosive energy of 570 Hiroshima or Nagasaki bombs...one every six days![16]

This is not the place to discuss the various aspects of these actions, including the tremendous ecological disruptions, and the suffering of the civilian population. We shall focus here only on the development, in the context of Indo-China, of the notion of automated battlefield techniques. The techniques, outlines in a famous speech by General Westmoreland in 1969, conceived of an all-computerized control of vast areas with the capacity of unleashing instant and enormously destructive force without human involvement. Such automated battle field techniques can be used mainly against technologically less sophisticated adversaries. If utilized against technologically advanced countries, tremendous problems in gaining air supremacy and of maintaining, without interruption, the electronic system of surveillance and communication, will arise.

The automated battlefield techniques, therefore, can allow rich and technologically advanced powers to maintain coercive control over large masses in distant parts of the world even if politically unacceptable. It is probable, however, that such control is only temporarily possible, due to the strong counter-forces which are generated by the very nature of such warfare. Countervailing forces develop even within the industrialized countries as a result of the indiscriminate and brutal nature of warfare.

Frequently, there exists a vicious circle of militarization and dependence on coercion rather than democratic participation. This applies, first, to civilian regimes maintained by military forces. Reference can be made here to racial minority regimes, where the armed forces do not try to take over political power because it is unnecessary. In these cases, there is a clear congruence of interest between the armed forces and the civilian government in maintaining control over the majority of the population through coercion. The reliance on coercion, however, seemingly eliminates the need to make political concessions and to involve the majority in democratic processes. Since the necessary concession, required by the development, of society, are not made, social tensions increase and the need for coercion becomes more acute. This stimulates terrorism, torture, informers, secrecy, and continuously increasing exclusion from participation in decisions. Increasing opposition on grounds of conscience develop

even within the racial minority, with increasing dissatisfaction and thereby also further strangulation of democratic participation even among this privileged minority. Consequently, there will be police actions against dissidents within the minority, increased secrecy, censorship, and the other elements familiar to conflict escalations. Reliance on coercion therefore has its own built-in limitations, and leads to severe perversion of the political system.

Much the same is the case in countries where the military takes over power from civilian regimes. This happens as a consequence of many different causes. On general level, factors like economic problems, corruption, political schism and general disillusionment have combined to create the climate in which coups can successfully take place.[17] It may generally be said that military takeovers are manifestations of urban discontent, but they also reflect certain characteristics of the military communities in the countries concerned. These characteristics differ vastly, and further generalizations are dangerous. We could nevertheless distinguish between two kinds of military takeovers. Some are more or less pre-planned, within a general logic of counter-insurgency. International training for counter-insurgency has increased the legitimacy of military intervention in domestic political affairs. The emphasis on 'stability' and 'orderly development' rather than on democracy in such training create a distaste among officers for the difficult and time-consuming civilian political processes. Much counter-insurgency training may in fact be seen as coming very close to preparations for military takeovers.

In other cases--particularly in Africa--military coups have not sprung so clearly out of internationally planned counter-insurgency, but have taken place due to more particular local factors. Officers sometimes develop a distaste for civilian politicians. They overemphasize signs of corruption, profiteering, and fractionism which certainly do occur in Third World politics--as well as in the industrialized world. Antidemocratic notions of 'strong government', of which Europe has also had its rich share in the past, easily come to the surface when it is actively legitimated in the international community. At the early stages of military intervention, the officers may sometimes see themselves as the only uncontaminated force in the State, possessing virtues superior to those for the civilian. In the many cases, their identification with the former colonial metropolis creates difficulties when the civilian government pursues a policy of confrontation. The statement made by Colonel Afrifa of Ghana,[18] who was involved in overthrowing Nkrumah is revealing: he reacted to the policies pursued by Nkrumah with regard to Britains's non-action in Rhodesia:

> "I knew personally that Her Majesty's Government of the United Kingdom was quite capable of dealing with the Rhodesia situation. I felt that Nkrumah was making too much noise about the whole issue."

Later, he said:

> "I have been trained in the United Kingdom as a soldier, and I am prepared to fight alongside my friends in the United Kingdom in the same way as Canadians and Australians will do."

Another point to be stressed in this regard is probably even more important: with technological developments in armaments, the armed forces of the Third World are the institutions which, more closely than any other, become replicas of the industrial world. Centralization, technological modernization, hierarchical organization which intensifies social stratification, are all important aspects of the social processes which follow upon militarization. If surrounding society develops in ways different from that of the military organization, this becomes a threat to the military, and thereby an additional cause for intervention to change directions. Also, when civilian authorities seek to limit military budgets in favour of other necessary charges, this can be seen as a direct threat to the military, and an additional factor for the intervening of military power.[19]

Whatever the initial cause of military intervention in civilian politics, the long-range effect invariably tends to be extremely unfortunate. In some cases, it is that the officer group itself takes over not only political power but also control over much of the economy by appropriating, at personal level, the ownership or control of production.[20] In this way, parts of the officer groups become a social class in themselves, with vested interests, which they seek to protect through the use of armed coercion in the face of opposition. Corruption is definitely not something to which officers are lastingly immune.

Even when officers avoid such pitfalls and maintian their purity and austerity at the economic level, their continued rule nevertheless creates serious problems. Over a short period, authoritarian rule without democractic processes may on the surface seem useful and provide stability to facilitate economic growth. In the long run, however, it will be discovered that national economic problems do not consist of clear-cut choices between obvious alternatives.[21]

A society undergoing rapid change necessarily experiences substantial conflicts of interest, which cannot be solved by 'strong' governments, but only through consultation with and participation by all segments. Failure to do so necessarily leads over time to the perversion of political power, with spiralling repression, political imprisonment, secrecy, and the consequent lack of creative participation which is necessary if a society is to remain a living and coherent organism. Whatever the initial good intentions of the military which intervenes in civilian politics, the long-range effects tend to be reliance on coercion as a substitute for creative change.

There can hardly be any doubt that militarization is directly and indirectly wasteful. It is directly wasteful when weapons are used for maintaining control in the face of large-scale opposition. The devastating ecological and social effects of capital-intensive counter-insurgency has been demonstrated, above all, in the case of Indo-China, but similar effects are experienced to a lesser extent in many other cases of armed repression. Militarization, however, is also indirectly wasteful due to the misuse of resources. Most weapons have to be imported, and for that purpose products have to be exported which could otherwise have been utilized for local consumption. Military developments in the Third World are significantly more negative than in the industrialized countries, with regard to manpower, which is one of the most serious bottlenecks for the acceleration of social and economic developments. It has been estimated in transportation, subsistence and training of one soldier would suffice to provide general educational and industrial training for civilian.[22]

Weapons or weapons instruction is not consumed by the workers (in the periphery) and can never be. It can never enter the productive process in those countries, however indirectly. It is utterly sterile. What the exchange has done is to shift potentially productive surplus from India to Russia, or from Brazil to the United States, or the Middle East to Britain and waste in the opposite direction. From the point of view of the capitals involved, it is a one-way transfer of investable surplus which takes place even on the assumption of equal exchange.

Even if the weapons are partly produced in Third World countries themselves, there is a wasteful diversion of productive processes. Armament production is never production to cover basic needs. For the major industrialized States, armament production is a tool for the maintenance of political control and the unequal divison of labour. For some few of the major Third World states, domestic arms production may become a tool for exerting local hegemony with some degree of autonomy from the superpowers. Even so, these arms-producing Third World countries will remain technologically dependent on the major industrialized countries, due to the tremendous difference in the capacity for research and development.[23]

Efforts have been made to examine whether militarization represents a burden on the economic development of a country.[24] Unfortunately, they have so far not posed the questions in a meaningful way, which is why we do not have a satisfactory answer. One approach has been to examine the growth rates of the gross domestic product (GDP) of individual countries, as compared to their military expenditures. This approach, however, for easily understandable reasons has not yielded many interesting elements, which can be explained by taking the following propositions into account.

Militarization is most advanced where social tension is greatest; and a major cause of social tension is inherent in labour-repressive systems. These frequently maintain a small but privileged working class,and a large and exploited one. In such societies there may be considerable economic growth, but at the expense of most of the population. There may even be considerable welfare-spending on the privileged groups, while the underprivileged may be increasingly exploited or marginalized. South Africa may serve as an extreme but nevertheless highly revealing case. The relation between military expenditure and gross domestic product would here provide a very superficial analysis. It is evident that, in South African society, military expenditure is doubly detrimental to the non-white majority. First, it is an instrument to prevent change towards democratic participation and equality: it serves to maintain an extreme case of labour repression. Secondly, military expenditure represents waste of a significant part of the surplus obtained through the labour of this majority. This surplus could have been turned into badly needed welfare and education. To argue, therefore, that high military expenditure may be consonant with economic growth, is to add insult to injury. While South Africa is extreme, it is not difficult to find similar characteristics in a number of other countries.

Are there positive aspects of armaments?

So far, we have examined some of the negative consequences of militarization. Nevertheless, under the present world military structure, we must accept that some amount of armaments will be required for highly legitimate purposes in many Third World countries. First, the limitation of colonialism would in many countries not have been successful without partial resort to an armed liberation struggle. In the process of political and social mobilization, the liberation movements of the former Portuguese

colonies had to defend themselves against the military forces of the Portuguese. Without the arms which brought down some of the Portuguese aircraft and hampered the movement of the colonial forces, efforts to create liberated zones would have been extremely difficult. Similarly, it will be difficult to bring to an end the illegal occupation by South Africa of Namibia, unless the liberation movements obtain some equipment to stop the repressive operations of South African armed forces. Beyond this, there is a legitimate need for defence against expansionist sub-imperial powers.

There are some, however, who go further and claim that the development of armed forces has positive consequences for society. This is a relatively new notion, which coincided with the development of the strategy of flexible response, including the preparation for counter-insurgency.[25] In the early 1960s, Western sociology and political science were dominated by theories of structural functionalism. The theory of development and underdevelopment, at that time rather naive as compared to present theories, were understood as the degree of deviation from the most advanced industrialized countries. According to this notion the greater the difference as compared to the leading countries, the greater the degree of underdevelopment. It followed that there are stages of growth or development, and that there existed bottlenecks, which had to be resolved in order to modernize. 'Development' was equated with 'modernization', and one important part of 'modernization' was 'nation-building'. As part of this theory, it was claimed that the armed forces could play an important role in modernization, and hence--by definition--for development. This is not surprising, since it is uncontested that armed force represents the institution within Third World countries which is most similar to comparable industrial institutions. Most Third World armies have been patterned on the industrial model, which is not only a product of cultural imperialism, but also a consequence of the weapon technology chosen. This technology has been developed in the industrialized countries, primarily for the purposes of the industrialized armies, and when transferred to the Third World requires institutions similar to those of the originators. The theory of modernization through the armed forces contains the following elements.

Military organization is the most suitable tool to alter traditional society and promote social change, because of its hierarchical structure, its emphasis on discipline and the unity of command, and because of its control over the coercive instruments. Further, knowledge and tne skills in technology and administration makes the armed forces into a more advanced institution than the rest of society. Since the officers were largely recruited from the middle classes, and given a solid professional training, the military has more internal cohesion than other groups in the society.

With hindsight, these theories proved to be untenable. First, the theory of development on which they were based crumbled when analysed by scholars from the Third World. Authors like Samir Amin (1971), Andre Gunder Frank (1971), Gustavo Lagos (1963) and Osvaldo Sunkel (1972) developed the theory of dominance and dependence[26] which claims that the penetration by Western-based capitalism of Third World countries has led to an international division of labour, where control rests with the major industrial states. Such control is made possible by subordination to this division of labour, and is upheld by existing bridgeheads in the Third World countries, elites whose interests are served by continuation of subordination. Hence, efforts to break out of the system of dominance and unequal division of labour mainly occur as domestic conflicts between peripheral and elite groupings inside Third World countries. The metropolises come to the assistance of their bridgeheads, the power elites in the Third World countries, through direct military intervention, arms delivery, provision of counter-insurgency expertise, and economic aid.

Subsequent developments have shown that this is also too simplistic a theory, particularly since governments of many Third World countries are increasingly autonomous in regard to the 'metropolises' of the north. The lasting value of the theory of dominance and dependence, however, is probably its underlining of the continuously unequal division of labour as long as the economy remains structurally dependent on the world market. So long as the armed forces of the Third World seek to become replicas of the armies of the industrialized world, they will always lag behind and be the main instrument of preserving structural dependence.

Let us briefly reflect on the notion of nation-building, which has also figured prominently in discussions on the role of the armed forces. 'Nation-building' has much too frequently been ascribed a positive value, without examining its possible contents. There are two fundamentally different versions of nation-building. On one hand, there is the centralized building of the nation where the elite seeks to mobilize the periphery for policies defined by the centre in a directive way. Such a pattern easily degenerates into a system by which the centre exploit the periphery for its own benefit, creating increasing inequalities in the process. The other version of nation-building is generated from the periphery; in a decentralized way, and gradually mobilizes increasingly wider segments of the population in a co-ordinated effort to improve the social, political and economic conditions under which they live. Nation-building of this kind occurred in connection with some of the liberation struggles against colonialism in part of the Third World, but not always: some liberation movements were purely military organizations, not capable of mobilizing the population for social and economic change. Others were only incidently involved in armed struggle, primarily carrying out social transformation. In so far as they succeeded in mobilizing wide sections of the population for creative participation in development—in political, social, and economic terms—these countries may, after independence, become alternative models for developments in the Third World.[27] Returning to the question of the role of the armed forces, it is important to understand the relationship between the form of force and social formations.[29] In the advanced industrialized countries, the form of force is characterized by a permanent arms race, possessing two features of particular importance. One is that the armed forces are organized around the weapon system: the technology of weapons is the most important factor, and the soldier is of secondary importance, serving technology. In the arms race, there is also built-in tendency towards expansion. As pointed out by Barnaby in the present issue, arms dynamics today are characterized by a qualitative race. The continuous development of new weapons, which makes other weapons more or less obsolete, require continuous replacements. To the extent that Third World armies adopt these forms, they become permanently dependent on technological developments in the industrialized countries. As previously pointed out, this will apply even if they try to develop some domestic arms production.

The liberation struggle, particularly in the former Portuguese colonies, indicated that there are opportunities for a different military technology. Against the relatively advanced weapon technology of the Portuguese forces, the liberation movements utilized smaller weapons which by necessity had to be carried manually. Much of this weaponry, and particularly the surface-to-air missles, nevertheless proved to be increasingly effective as a defence against the Portuguese forces. It was possible, throughout the struggle, to maintain an egalitarian, non-hierarchical liberation force with a technology more congruent with the condition of the country. It is possible that this can provide a lesson for a different kind of military organization, compatible with social equality and balanced development.

Conclusions

In this article, I have not sought to challenge the obvious, legitimate right of Third World countries to defend themselves against external aggression in consonance with the United Nations Charter. The main argument has been that the militarization which many of these countries are at present undergoing has a number of negative consequences. One of them is that the armaments are mainly used for internal and frequently repressive purposes. Another, and interlinked, observation is that militarization is likely to increase the structural dependence of Third World countries on the industrialized north. The 'modernizing' function of Third World armed forces then becomes a euphemism for the intensification of dependence.

In the quest for genuine self-determination, Third World countries are therefore probably best advised to pursue the two following roads.

On one hand, to opt for a different kind of armed force than that of the industrialized countries: less capital-intensive and with a less complex technology. It should have to make the human being (the individual soldier) into the servant and the weapon into the servant of armed action. It should also be harnessed solely to serve actual needs of defence, and not made into a military establishment with its own dynamics and interests. The other task which it would be highly desirable for the Third World governments to undertake, is to push much more strongly than in the past for disarmament on a global level. The tremendous technological superiority of the industrialized and some sub-imperial powers in the Third World, must be eliminated. Since this cannot possibly be carried out by a process in which the Third World countries seek to match the present armaments of the north, it has to be achieved through far-reaching, general and comprehensive disarmament. As pointed out by Marek Thee in this issue, proposals have already been tabled by the United States the task ahead must be to push, with all their vigour, the United Nations to convene a world conference on disarmament and from there onwards lead the pressure on negotiations until present military establishments have been substantially reduced and equalized. They will find many supporters in the north, though not always in government circles.

Notes

[1]Ali Mazuri, quoted in Gingyera-Pinycwa and Mazrui (1974), p. 129.

[2]In Facing Mount Kenya, as quoted in Gingyeral-Pinyewa and Mazrui (1974), p. 129.

[3]Texts of the Brussel Act, the Saint Germain Convention and other documents from the same period can be found in Chamberlain (1929).

[4]Text in Chamberlain (1929).

[5]Another cause of military growth and arms transfer was the repressive function of the colonial army—increasing with growing resistance from the colonial population. In many places, the colonial army incorporated soldiers and non-commissioned officers--sometimes also officers--recruited from among the local population. These persons were socialized into identifying with the colonial army in repressive action against their own people. Consequences can be found in the study by Albrecht, Ernst, Lock and Wulff (1976) (forthcoming).

[6]SIPRI. Arms Trade (1971).

[7]Some States declined to join the Western-led collective security system, but nevertheless carried out a substantial armament programme in order to face the real or imagined threat from nieghbouring countries, which were being militarized through Western inducement. This happened, for example, with India: that country started its long road towards heavy militarization partly as a consequence of the strong arming of Pakistan by the United States. A study of India's militarization can be found in Wulff (1974).

[8]A survey of the causes and functions of military bases is forthcoming in Milton Leitenberg's contribution to IPRA Study 1976.

[9]An examination of this doctrine can be found in Mike Klare (1972).

[10]This eventful visit took place in 1969.

[11]The arguments are reviewed in Klare (1972), p.271-3.

[12]An analysis of the growth, causes and consequences can be found in the study by Albrecht, Ernst, Lock and Wulff (1976) (forthcoming).

[13]An investigation of some of these practices can be found in United Nations Inquiry (1974)).

[14]Further details on counter-insurgency in Southern Africa will be forthcoming by Eide (1976). A comprehensive study of militarization and conflict dynamics in southern Africa is found in Backstrom-Landgren (1976).

[15]On the notion of 'sub-imperialist powers' and the role they are likely to play in the future international system, see Vayrynen (1975) and, with particular reference to armaments, Oberg (1975). Among sub-imperial powers are normally included--in addition to south Africa--Brazil, India and Iran.

[16]There exist many studies on the nature, scope and consequences of counter-insurgency warfare in Indo-China. Condensed information will be found in the contribution by Marr to the IPRA STUDY 1976, from which the above figures are taken.

[17]A recent study of these causes can be found in Gutteridge (1975).

[18]Afrifa (1966), p. 104 and 112.

[19]Interesting initial results corroborating such a thesis, based on material from several African States, have been presented by Jan Jorgensen in a project outline entitled Government Expenditures on Peace and Violence in Six African States, 1915-1973. Available from the International Peace research Institute, Oslo.

[20]Documentation with regard to Indonesia is found in Creyghton (1976) and with regard to Uganda, Jorgensen (1974).

[21]Gutteridge (1975), p.11.

[22]Kidron (1974), p. 108.

[23]For a fuller discussion, see the study by Albrecht, Ernst, Lock and Wulff (1976).

[24]A survey of such efforts can be found in Kennedy (1975), Chapter 10.

[25]Most well known for his espousal of the positive functions of militarization, including increasing technologization of the army, is Lucian Pye (1962). A compilation of arguments on this direction can be found in Kennedy (1975).

[26]A survey of the works demonstrating the relationship between dominance and dependence can be found, for example, in Eide (1974).

[27]I have in mind, in particular, the PAIGC of Guinea Bissau and FRELIMO of Mozambique.

[28]This point will be further elaborated in the introduction to IPRA Study 1976, based on (unpublished) works by Mary Kaldor.

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TRANSNATIONAL MILITARY CORPORATIONS: THE MAIN PROBLEMS

(Edited and adapted from) "Transnational Military Corporations: The Main Problems," Helena Tuomi. Militarization and Arms Production, St. Martin's Press, New York, 1982.

The concept of transnational military industry should not be taken as given or self-evident. Because military production is first of all aimed at national defence and because many secrecy rules and security considerations have to be taken into account, it is not possible for the arms industry to go international or transnational in the same way as civilian industry does. Also, the large public funds in all phases of arms production (R&D, production lines, army procurements and finally government control of exports and credits for exports) make the industry a special kind of activity. It is no free enterprise[1]--even if privately owned--but a scrupulously protected and carefully supervised activity which enjoys considerable public funding and political control. We should therefore realize that if the concept of transnational military industry is used, it is not the same type of transnational industry we speak of in the civilian sector. The military industry is nowadays transnational, but it has its own special characteristics[2]. The concept should therefore preferably be used only in empirical contexts, bearing in mind that the expansion or internationalization of military industry has various political, security and other constriants.

The main reasons why military production has become transnational can be summarized as follows:

The military industry is dependent on foreign sources of raw materials, special alloys, steels etc.[3] In some cases, arms producers have invested in raw material ventures abroad which has resulted in the expansion of their own international organization--while in other cases they rely on transnational corporations (TNCs) specialized in raw material production.

The complex nature of modern military technology, the need for highly skilled research personnel, technicians and workers, large and complex production lines, etc. are factors which tend to concentrate the production of modern arms into the largest corporations. Small enterprises simply do not have enough human or material resources to make heavy arms or weapon systems. Instead, they may function as subcontractors for the large arms producers. Thus, the more complex the weapon in question, the more probable it is that production can take place only in the largest corporations. These, then, are often transnational even on the basis of the civilian divisions of the same corporations--the production of military electronics being a good example of how civilian and military activities are mixed in transnational operations.

Arms production has become very expensive: The R&D phase is expensive, the highly skilled personnel is expensive etc. It is fully justified to characterize the current situation as the cost crisis of arms production, and this problem is notable both in the West and the East. The cost crisis calls for various strategies of rationalization. Thus mergers of different producers into bigger units, coproduction with foreign partners, export expansion, subcontracting to find cheap components or labour, and finally a move into foreign production have taken place within the military industry. The cost crisis is perhaps the strongest single factor urging the arms industry to go transnational.

Because arms production is carried out to back national defence, many states maintain these companies even if it is not economically reasonable. The possibility of a military crisis or even war keeps arms production lines running, despite the enormous expense. It is evident that arms are produced in excess of world demand: there is too large an output and a production capacity. It is difficult to pinpoint when the overcapacity crisis began or to give accurate data on its dimensions. There are also problems concerning empirical measurement: some scholars measure overcapacity on the basis of exports--arms which exceed the country's own needs--while others also take idle production capacity into account.[4] The existence of serious overcapacity problems is indirectly proven by the very intensive competition between arms producers over new sales. The fierce competition, again urges the companies into transnational operations: sales of licences, subcontracting agreements, offset deals etc. are used if the purchaser so wishes. "The arms supplier who is ready to transfer technology is often preferred by the buyer, and technology agreements are thus one of the main forms of competition. The result is growing transnationalization of military production. This competition can be observed in connection with almost every arms deal--be it small weapons or heavy arms.

The problems of state finance have also enhanced the role of the largest industries. Those countries which previously used to give military aid have increasingly moved into commercial deals. Arms sales, education, maintenance and service have increasingly been delegated to specialized industries. The commercial basis, again, emphasizes the role of the large industries and in fact strengthens the transnational organization of the companies.

TRANSNATIONAL ARMS CORPORATION VERSUS STATE

Arms decisions are made by a trio of social institutions: the government, the army and the military industry. Inside this group there can be subgroups which further their own particular interests: e.g. the air force can ally itself with the aircraft industry to beat the demands of the navy, the infantry etc. On the general level, the common interest is national defence and foreign obligations or influence, but in concrete decisions and in the struggle for the scarce funds, subgroups are formed. There is no agreement among scholars as to whether it is the government, the army or industry that is the dominant party. All parties have their own power tools: the government has the money, the military is responsible for the defence, while industry in many cases has the technological initiative and the best skills in this respect. The actual situation varies from one country to another.

If the situation is such that industry, indeed, holds the monopoly on modern arms technology, this particular feature can give it a strong position vis-a-vis the others. If the industry is financially strong enough to invent new military technologies without being totally dependent on state funding, it may also be able to promote its initiatives actively. The transnationals involved in military production can acquire this financial strength. On the other hand if the army or defence department are well equipped as far as technological skills are concerned, they are able to judge which new weapon developments they want. In general, there is much faith in new military technologies. This gives ample power to those who command it, be they in the defence department, in the army or in corporations.

The long development phase of each new weapon--five to ten years is not unusual--and its consequent high costs are also factors strengthening the position of the armament firms. After all, it is the normal practice that the company carries out both the R&D and production. The companies often use a kind of creeping method to be able to acquire a new R&D contract, i.e. they start out with a modest proposal and a modest sum, but when the programme is well under way they increase their demands and add new costs. After the company has completed the long and costly R&D phase, it is most probable that it will also start production. If not, the R&D costs would have been wasted and there would be no use for experience and skill developed by the firm. It is the role of the corporation in R&D and the link between R&D and production which further strengthen the role of the large firms in the armament process in general and with regard to the state authorities in particular.[5]

What is evident, however, is that the trio of the defence department, industry and the army is a very strong social coalition and very difficult to control politically. It may not be very fruitful to ask which one of the three is the strongest--they usually act together anyway.[6] But it should also be noted that industry is in any case much more active now than it has traditionally been. The capability to develop and produce new military technologies can also have an impact on the military doctrines: thus the expansion of the eletronic and communication industry has been followed by the predominance of the military C3 systems and electronic warfare. Perhaps the rise of the chemical industry will be reflected in a new interest in chemical weapons? These examples may suffice to show that the relationship between industry, technology and the military is a complex one and cannot easily be evaluated.

A particular problem in transnational military production is the very fact that transnationality gives the company more autonomy vis-a-vis the state. If the government blocks a plan in country A, the company can start it in country B. If country A blocks the exports of arms or spares from country A, the company can export them from country B.[7] If the government A prohibits the company from doing business with country X, the business transnational firm can operate from country B, which wants to have good relations with country X. A transnational firm can declare that it exports parts or spares to its subsidiary or test areas in country B, but it can then re-export the cargo to destination C or via C to D.[8] There are many concrete examples of these various cases.[9]

The transnational organization of the firm makes these cases possible: the firm can escape government regulations and increase its autonomy vis-a-vis the state.

Many transnational producers are diversified companies, in which one or two divisions are engaged in the military programmes while the others manufacture civilian products. The company can now use the civilian organization to mask its military operations abroad, e.g., in the transnational electronics industry it is almost impossible to identify the military transfers among all operations. The problem becomes even more difficult in cases where the same product can be used for both civilian and military purposes (cf. the nuclear industry). Thus the dual technology and the diversified nature of the company together with the transnational organization make the identification of military transfers almost impossible in present circumstances.

Another factor which facilitates the growing autonomy of the companies is their resistance to give information on their accounts, turnover composition, industrial organization and network of subsidiaries and partners. A good example is the transnational electronic firm Philips, whose annual report or normal business handbook do not give any information whatsoever of the military aspect of the company. After time-consuming and laborious investigations, an analyst is able to discover, however, that the company has a large number of military subsidiaries in various countries and turnover of these firms must be sizeable--otherwise the company would hardly tolerate these subsidiaries. The fact that the companies hide information further enhances their autonomy. For this reason it is also impossible to tell exactly how deeply a given firm is involved in the military programmes of various countries.

The factors mentioned above point to the growing autonomy of transnational military industries and difficulties of political control. On the other hand the relationship between the state and the TNC is one of both conflict and cooperation. The TNCs must cooperate with the home and host governments because they need a lot of public funding for research, development and production contracts. In fact, they would hardly be interested in military programmes at all if these public funds were not available. The financial support of course gives the state--at least in principle--one very efficient means to control the military programmes of a given firm. It is not, however, always easy for the accountants to discover how, exactly, the company uses the funds supplied by the state, because it is difficult to isolate the reasonable price of each phase of the arms programme--the companies are known to use maximum pricing methods. Because of the uncertainty of markets, the companies also make heavy claims: the state should guarantee all costs and a good profit. There have been cases in which the firms have acquired or demanded too high profits--e.g. the U.S. Congress has for this reason discussed what a reasonable profit should be in arms programmes.[10]

On the other hand, military programmes are not necessarily profitable as such. Actually, rather few companies would stay in military programmes in the event that state funding ceased. But the companies can use the military programmes tactically to press for money for their difficulties: thus, e.g. AEG-Telefunken, Chrysler, Lockheed and Rolls Royce have been saved from bankruptcy because of their military programmes. It is the large public funding, particularly for new R&D, which keeps most TNCs in military production. In addition to the funding, the states encourage the firms to export arms; this way the unit prices of weapons decrease and the pressure on the military budget is somewhat decreased.

One important aspect is that many TNCs are involved in military production in a number of ways, which means that they can exert pressure on the state from many directions. Also, their impact on the global militarization can multiply. Firm A is engaged in nuclear reactor production and aeroengines; firm B is making sophisticated radars and nuclear energy products; firm C is making various types of military electronics and is engaged in nuclear technology; firm D makes not just cars but also has connections to aeroengines, aircraft, nuclear energy etc.[11] Thus the total influence of these firms on the armament programmes can be massive, but this is not so easily noticed, because they do it step by step or in various directions and perhaps via different state authorites.

FORMS OF TRANSNATIONAL MILITARY PRODUCTION

All leading Western military producers are transnational to some degree--transnational being defined as having operation in at least three countries. This process has been intensive during the last 10-15 years, mainly due to the fact that since the end of the 1960s the European companies have become more competitive with regard to the U.S. companies. The transnationalization process started in Western Europe, then moved to Southern Europe and Japan, and is now reaching the Third World.

The socialist arms industries are also transnational in the sense that they have large exports, and licences and technology are sold to foreign countries. The transfer of technology normally takes place between the Soviet Union and its allies (with the exception of India and Peru),[12] but export takes place on global scale.

Arms transfers, as noted previously, are a consequence of arms economics in the leading armament centres. The political and military motives are not discussed here, as they do not explain the transnationalization process.

Internationalization usually starts with arms exports. Although ready-made weapons are exported, the organization can become transnational even in this phase. The fierce competition calls for sales offices and a network of efficient sales agents (either of own nationality or local agents). The service and maintenance network as well as education programmes connected with the arms sales can also speed up transnationalization. These networks can also develop into component production, assembly etc. The superactive sales promotion methods of the largest arms producers as well as some extreme forms of marketing (particularly bribery) can be noted in this context. Although the export normally takes place under state control (both buyer and supplier), there are also signs of independent marketing by the TNCs.[13] Certain places, such as Singapore, have developed into real market places for various weapons.

The transnational organization enables intra-firm arms transfers, but it is not known how common this is in the arms trade. In certain cases the firms have founded "foreign test areas" in places from where it is easy to export arms to third countries.

International subcontracting increases military transfers in two directions: the TNC can import components from countries where the labour costs are low (or raw materials are easily available), but a TNC can itself be a subcontractor of complex components into foreign weapon systems (e.g. engines, electronics, more sophisticated weaponry). Usually, the TNC makes capital and research intensive parts at home and labour intensive parts in low-wage countries.

The sales of licences, foreign assembly and finally coproduction of arms with foreign partners are further forms of transnational arms production. In licence production, there is usally one TNC which controls the cooperation, while in coproduction the partners are in principle more equal--perhaps several TNCs. A comparison of the MRCA and F-16 programmes in Europe is illustrative in this respect.

The ownership patterns of arms industry are a combination of nationalist concerns and internationalization. Minority shares of the US companies in European industries became common as early as in the 1950s and 1960s; later on, the European industries started to buy themselves into foreign arms industries, too. Usually, the TNC purchases foreign shares or forms a foreign joint venture (with the TNC in the minority) to secure markets and future cooperation. For the foreign partner, this is a measure to acquire technology and to tie the TNC to the economic success of the company. The problem with these ownerships is that the basically and originally national military-industry complex may develop into an international one with possible negative consequences. A category of its own is formed by companies like Euromissile or Panavia, which are founded to administer coproduction.

The TNCs usually use their organization in a manner which has been accepted in both the sender and the recipient country. There are, however, also examples of operations which are not legitimate in one or the other end of the path. The TNCs have sometimes founded cover partners abroad to mask their illegal financial transfers. A famous bribery case was connected with the Widows' and Orphans' Fund in Singapore, but others have used less extreme methods of concealment. Also, the illegal use of civilian transport technology can be noted: e.g. artillery shells have been smuggled to South Africa with falsified shipping documents and destinations. Often the TNCs use small private airlift or shipping firms and various stops en route when they mask the transfers. It is also very common to put incorrect producer names or countries on weapons to mask the original producer.[14]

The largest military TNCs are in the United States, and their absolute military transfers are the most extensive. On the other hand West European companies are relatively speaking (and on an average) more dependent on military production and military exports.

SOME EFFECTS OF TNC-CONTROLLED ARMAMENT PROGRAMMES IN THE LDCs

We will here examine those negative consequences that are directly related to the transnational character of the leading arms suppliers, that is, we will not discuss the negative aspects of military programmmes in general.

The TNCs basically want to increase their markets in the LDCs and they are flexible in forming various cooperation programmes to secure the markets. The TNCs can act together with their home governments, but they may also act "on their own".

The TNCs are obliged to keep the newest military secrets in their home countries and only export those arms or weapon systems which have an export licence. In the military sense the "best" technology is therefore not exported--only the "second best" is sold abroad. The equipment for electronic warfare capability, for example is a prime example of the difference at the moment between the export model. It is probable that exported radar systems also differ from those for home use.

The buyer who is technologically less informed does not usually know whether his imports are obsolete by some secret standards or not. Nor does he know in what way his imports are out-of-date, because these matters are connected with military secrecy rules. The extent of this problem is not known, but it evidently causes irrationality in arms transfers. The technology you have bought may be the "newest" according to the military adviser (often from the supplying country) and according to sales agents or advertisements--and two years later you find out that some new innovations make your purchases obsolete. Any electronic equipment will, in any case, become obsolete rather quickly. Thus the buyer is faced with a permament dilemma here, but all he can do is rely on the information given by the TNC.

Another problem is the pricing policy of the TNCs. They naturally use lower prices for ready-made arms than for parts and technology transfers. This makes the import of ready arms often half as cheap as would be the case in licensed production of the same weapon.[15] For countries wanting to start their own military production, technology agreements with the TNCs can thus be very expensive.

In general, the TNC comes from the developed world and represents an industrial concept of warfare. What it produces may require a whole military-industrial complex. Thus cooperation with the TNCs can have an intensive impact not only on military affairs and production, but also on the whole culture, as new values and habits are introduced. This process was clearly visible in Iran during the rule of the Shah, and a comparable process is now under way in Saudi Arabia. The consequences of this sort of transformation can be very radical and unpredictable.

The LDC starting cooperation with a military TNC usually wants more security and, with indigenous arms production, also more military independence. The more complex the technology desired, the more contradictory are the goals of independence and the technological dependence on the TNC. As noted before, particularly military electronics, radar networks, C3 systems, military engines for airplanes, ships and tanks as well as more sophisticated weaponry have proved to be bottlenecks in the LDC arms industry. If arms are imported, the dependence on TNC technicians, service maintenance and know-how may continue for a very long time.

The technology agreements also usually prevent the LDC partner from becoming an independent producer. The TNC does not want competitors.

Together with the technological dependence--which is a security risk--totally new forms of security risk have risen. Certain TNCs with global markets advertise that "they have huge data banks to be able to serve their customers well". Here, the security risk is evident: a huge data bank on the defence systems of customer countries--probably also on potential enemies of future customers. How would this information be used in the event of a crisis?[16] Strong dependence on foreign personnel, spares and service is also a security risk, because supplies and cooperation on the side of the TNC is not guaranteed. The defence of Iran since it has been at war with Iraq is an example in this respect--on the other hand it seems that Iran has to some extent recently been able to use the transnational organization or certain military firms by importing spares and equipment from Southern Europe and Israel while these imports from the United States were forbidden.

TOWARDS CONTROL?

In general, the TNCs have too many secrets, but this is particularly notable in connection with the military TNCs. In fact, it is impossible to present any detailed empirical analysis of the extent of transnational military production.[17] It is up to the home governments to get the information. It is important to note that it is in the interest of the home states to have this information because the home states do not benefit from the growing autonomy of the TNCs. Why deny arms exports to some areas if the TNCs can easily circumvent the regulations? Why work for a peaceful settlement of some political confict if the TNCs push in arms through the back door? Why work for the non-proliferation of nuclear weapons if the TNCs at the same time can export sensitive technologies by means of their international organization? Why give large public funds to a firm which suffers from financial problems at home but can afford extensive bribes abroad? Why secure the rights of small private shareholders and investors and demand reliable corporate information when the companies transfer money abroad and do illegal or otherwise secret business abroad? As can be noted, there are several reasons for calling for a more thorough control of military industries, particularly TNCs. The primary level of control is national in our view, as far as the total transparency of operations is demanded.

For research purposes certain minimum requirements regarding information should be agreed on. At present, conducting a comprehensive analysis and especially finding the crucial information is most laborious.

Certain military transfers have also disclosed the need for the home countries of the military TNCs to register the staff working in these companies. Although civilian, these people, above all technicians, planners and researchers, can have a significant impact on military developments. We can only point to the role of key planners in certain countries which are future nuclear weapon candidates.[18] For the same reason there should be some evaluation of foreign student programmes, perhaps even sanctions in case of a misuse of information. Above all, the responsibility of those who work with sensitive technologies, be it conventional or nuclear, should be a matter of education. So far, the labour market for experts in military technology has been [illegible]. The control in this respect cannot take place at the international level, but certain national measures should be conceivable.

Despite their interest in technological innovations, the companies are very often rather conservative in their planning. If some firm is used to producing export fighters, it tends to continue along the same lines, even though government policy would discourage fighter exports.[19] The companies should be encouraged to start alternative planning and in this way facilitate a diversification into peaceful activities. Sooner or later military production will become so expensive that this kind of change will be inevitable—it would be easier for the companies if they had prepared themselves for it. Worker's organizations and trade unions should also be encouraged to participate in conversion planning.

The new arms programmes are often started with deficient information as to the industrial impact of the programme as well as the real costs. The UN member countries should be encouraged to carry out such analyses in case they start new arms programmes. The information should also be available in an accessible form so that taxpayers know how much they pay for the arms race. At present, many countries do not reveal much information in this respect. Since the TNCs absorb a great deal of public funding, they should disclose more information on how they use those funds.

Arms trade is an area where national control is no longer efficient because of the transnational forms of military production. Therefore, only multilateral talks between all main producing states can bring about results in this respect. Particularly the rules of behavior in the Third World—political, military, economic and cultural--should be agreed on. Otherwise the militarization will only intensify.

Most arms trade is dangerous and increases military tensions. There is no reason why special attention should be paid only to the TNCs involved in arms trade. The national firms can be just as harmful. What makes the TNCs crucial, however, is their enormous flexibility and ability to escape controls and partial agreements as well as their efficiency in production and marketing. Unless an international control of arms transfers succeeds, the national firms will undoubtedly follow the models shown by the present TNCs.

NOTES AND REFERENCES

* The first version of this paper was presented at the SIPRI-TAPRI seminar in Stockholm on October 13, 1981. I wish to thank the participants of the seminar as well as Prof. Raimo Vayrynen for their valuable comments.

[1] As far as U.S. military industry in concerned, the same point is frequently made by Jacques S. Gansler, The Defense Industry, Cambridge, Mass. and London 1981 (third printing), passim.

[2] For some documentation see Helena Tuomi & Raimo Vayrynen, Transnational Corporations, Armaments and Development, Aldershot (GB), 1982.

[3] Cf. Helge Hveem, Militarization of Nature: Conflict and Control over Strategic Resources and Some Implications for Peace Policies, Journal of Peace Research, Vol. 16, No. 1, 1979, pp. 1-26.

[4] On the problems of overproduction and overcapacity see Gansler, op. cit. 1981 and Michael Brzoska, Economic Problems of Arms Production in Western Europe--Diagnoses and Alternatives, in this book.

[5]On the so-called "buy-in" methods of the military firms when introducing new R&D programmes see Gansler op. cit.. 1981. It seems that the link between R&D and production creates automatism in the armament process. For this reason it has been suggested that R&D and production be separated from each other.

[6]An indication of the close cooperation between the industry and the Department of Defense is the transfer of personnel between the two. Individuals with valuable experience in R&D intensive firms are particularly welcome to join the DoD. See Gordon Adams, The Iron Triangle. The Politics of Defense Contracting, Council on Economic Priorities, New York 1981.

[7]The ability of Iran to acquire spare parts for her American weapons in the war with Iraq despite the U.S. embargo is an outcome of a transnational network.

[8]The arms exports of the Canadian Space Research Corporation to South Africa are a good example of this. This case was carefully documented by the BBC in a TV programme in 1978. See also Micheal T. Klare, South Africa's U.S. Weapons Connections, The Nation, July 28--August 4, 1979, pp.75-78.

[9]Cf. Tuomi & Vayrynen, op. cit. 1982 for more detailed information.

[10]The problem of profits is discussed in detail by Gansler, op. cit. 1981.

[11]The production profiles of many military corporations are discussed in Tuomi & Vayrynen, op. cit. 1981.

[12]Cf. Herbert Wulf et al., Transnational Transfers of Arms Production Technology, Institute fur Friedensforschung und Sicherheitspolitik an der Universitat Hamburg 1980.

[13]During the 1973 arms boom in Iran a Pentagon memo said that "the Shah was unhappy about the independent agents running around his country on commisssion even though the aircraft are being purchased through the U.S. government." International Herald Tribune, January 26-27, 1980.

[14]Cf. Tuomi & Vayrynen, op.cit.. 1982, p. 133 and the references used there.

[15]Cf. The Arms Trade with the Third World, SIPRI, Uppsala 1971, pp.738-739 and Tuomi & Vayrynen, op. cit. 1982, pp. 204-205.

[16]When being asked how it was possible for the foreign aircraft to land on the Iranian territory without permission (when the United States made her unsuccessful attempt to rescue the American hostages), President Bani-Sadr replied: "They know so well the holes in our radar network."

[17]For some attempts, however, see Peter Lock & Herbert Wulf, Register of Arms Production in Developing Countries, Arbeitsgruppe Rustung and Unterentwicklung, Universitat Hamburg, Hamburg 1977 (mimeo), Wulf et al., op. cit. 1980 and Tuomi & Vayrynen, op.cit. 1982.

[18]The history of the Pakistani nuclear programme is illustrative in this respect.

[19]The arms restraint policy of President Carter prohibited the design of weapons solely for exports, but Northrop managed to proceed with the plan for a new export fighter FX. Cf. Aviation Week and Space Technology, January 14, 1980. Northrop specializes in export fighters.

THE IRON TRIANGLE

"The Iron Triangle," Gordon Adams and Geoff Quinn. Council on Economic Priorities Newsletter, June 1981.

The U.S. defense budget, which now accounts for roughly one quarter of all Federal spending, will rise rapidly in the 1980s. This rise stems in part from the intimate relationship between the public and private sectors of the extraordinary pressures it allows defense contractors to exert on Government.

Over the years, the defense industry has become an active participant in policy-making. People, power, and money move freely among three centers—the Congressional, the Executive (DoD), and private industry--creating a community of shared interest and assumptions which defends itself against outsiders.

The CEP Study

In order to examine the Government relations practices of defense contracting firms in this iron triangle, CEP selected a sample of eight firms. All are highly significant Department of Defense contractors and all dependent on DoD contracting for over 25 percent of their sales in the years 1970-1979. Boeing, General Dynamics, Grumman, Lockheed, McDonnell Douglas, Northrop, Rockwell International, and United Technologies together received 25 percent of all DoD contracts. 36 percent of all NASA contracts and over 37 percent of all DoD contracts in the 1970s. The scale of dependency on Government contracting runs from Grumman's high of 82 percent of corprate sales (in the 1970s) to Boeing's low of 31 percent.

Having selected the companies, we gathered a wide range of available data on corporate Government relations practice, using company disclosure and a variety of Federal and local resources. Each company is profiled in the study and the profile data were sent to each of the eight firms for review. Three firms did not reply: General Dynamics, McDonnell Douglas and Rockwell. Two companies--Boeing and United Technologies--provided a small amount of public information. Two others--Northrop and Lockheed--responded with threatening letters. One, Grumman, provided a fair reading of the profile and some additional data.

Research and Development

Contractor-Government relations begin at the research and development stage. R&D is at the heart of the Iron Triangle. Long before members of Congress or the general public become aware of weapons developments and changes in strategic policies, new weapons and missions are being defined by DoD and specialists in the industry. Even the Congressional committees given the specific responsibility of watching over defense Research and Development are forced into a subsidiary and ineffective role.

The Iron Triangle serves the purposes of contractors who design weapons for sales to the Government. Well aware of the importance of early access, the defense industry uses virtually all tools of Government relations to ensure an early, close and sustained intimacy with DoD and NASA. Contractors frequently take the initiative themselves in defining future weapons needs. Through advisory committees, trade associations and, especially, the transfer of R&D personnel, contractors have early access to information on R&D planning and an opportunity to play a role in defining future weapons systems long before Congress or the public are aware of these decisions. Once a major system exists, momentum is created in the company, the DoD and Congress to continue to fund it through production.

Political Action Committees

Defense contractors, like other corporations, have taken quick advantage of the possibilities created by the 1974 Federal Elections Campaign Act to create Political Action Committees (PACs). Like other aerospace contractors the eight companies in our study each created PACs between April 1976 and February 1978. These eight PACs spent over $2 million by 1980. According to Federal Elections Commission (FEC) data, $1.2 million of that sum took the form of Federal-level campaign contributions (from 1977 to 1978). Of the top 10 U.S. corporations in gross PAC receipts (1977-1978), Grumman ranked ninth ($171,434) and Boeing tenth ($165,155). Of gross disbursements (covering all spending--Federal, state, and local candidates: party committees and other), Grumman ranked eighth among all U.S. companies ($156,435). General Dynamics ninth ($155,956), and Boeing tenth ($135,377). Of the top 10 in contributions to Federal candidates, United Technologies ranked ninth ($198,725).

Among the eight companies in our study, General Dynamics had the largest PAC in gross disbursements (from its inception to mid-1978), nearly $510,000, followed by Grumman--$391,000--United Technologies--$342,000, and Boeing--$260,000. We also examined the Federal-level campaign contributions of the eight firms (combining contributions to candidates with those to campaign committees), and ranked the companies by amount.

PAC contributions patterns indicated a strategy of directing a sizeable proportion of contractor campaign contributions to candidates for Congress who either represented districts and states where the company had plant locations, or who were members of committees in the Congress which considered legislation and appropriations of importance to the company. Grumman contributed the largest amount to candidates from key geographic locations ($81,540), though McDonnell Douglas contributed the highest proportion (54.1 percent). Other company PACs ranged between 12 and 39 percent of contributions to candidates from key geographic areas.

Grumman again, contributed the highest amount to members, of the key House and Senate committees--$129,350, while McDonnell Douglas was again highest in proportion--60.37 percent. The general range for the other companies in this category was higher than that for key geographic areas—from 29 to 48 percent.

Washington Operations

A contractor's Washington office staff follows issues and seeks to shape legislation, procurement and appropriation decisions as they move constantly between the Executive and the Congressional side of the Iron Triangle. It also plays a critical role in planning a company's overall political strategy.

Washington office staffers can become so central to the flow of information that they become the medium for communications between the other two sides of the Iron Triangle. According to one Pentagon source, "The best thing about corporate lobbyists is that they pass on to us a lot of stuff that they've learned on Capitol Hill. It's usually the quickest way for us to find out what's happening up there."

Available data on lobbying is woefully incomplete because the Legislative Reorganization Act of 1946, which covers lobbying, is inadequate. Much of the Washington activity of the eight companies in CEP's study is, accordingly, undisclosed.

The eight companies in the CEP study, however have each maintained a substantial Washington operation for some years. Rockwell International has the largest staff with 85 employees, roughly 40 of whom work on defense issues. Other companies that undertook significant Washington efforts included, as follows in decreasing order of size and staff: United Technologies, Boeing, Northrop, General Dynamics, McDonnell Douglas.

All eight office directors play an active role in coordinating, directing and carrying out information gathering and advisory activities, but only two, Boeing's Russell Light and Grumman's Gordon Ochenrider, are registered lobbyists.

On the basis of preliminary Defense Contract Audit Agency reports released by the Defense Department to Common Cause in January 1981, we found that the Washington offices in our study which were audited--Boeing, General Dynamics, Grumman, Lockheed and Rockwell International--spent nearly $16.8 million between 1974 and 1975 for their Government relations activities, over $15.8 million of which was initially charged to contracts.

Both the preliminary and the final versions of these audits indicate that a substantial portion of these expenditures were for lobbying activities that sought to influence legislation and appropriations in Congress. In the opinion of DCAA some of these expenditures were not "unallowable costs" against contracts.

Transfer of Personnel

A transfer of personnel--uniformed and civilian—links the Executive with the industry side of the Iron Triangle. Defense contractors regularly hire DoD civilian employees and retiring military officers, who bring a wealth of professional experience and useful contacts to the company. The Defense Department hires personnel from the companies, providing the Government with skilled executives.

To the insider, this intimacy seems to foster technical and political knowledge that smooths the contracting process, ensuring a more efficient defense of national security and the public good. To the outsider, however, it suggests a closed community in which the private and Government interest converge.

In this study, we have examined the employee transfer reports for eight companies which hired 1,672 former military and civilian employees of DoD and NASA. During this same period between 1970 and 1979, 270 company employees, who moved to DoD and NASA, filed reports. In short, the flow of personnel has continued unabated, bringing the Executive and the industrial sides of the Iron Triangle even closer.

Boeing ranked highest in total transfers for the decade--(398), followed by Northrop (360) and Lockheed (321). General Dynamics, McDonnell Douglas and Rockwell has over 200 transfers with DoD each, while Grumman and United Technologies both had under 100. While such number of transfers may provide a rough indication of the closeness of the relationship of the corporation with the Federal Government, it may also indicate that some companies urge their employees to comply with the reporting requirement more strongly than others.

In terms of civilian transfers, particularly from DoD, a slightly different pattern emerges. Northrop hired the largest number (50), while Rockwell was the source of the largest number of civilian employees hired by DoD during the decade (47).

Our review of transfers focused on the category of "appearances of potential conflict of interest." We noted transferees who worked in similar areas of policymaking and weapons systems in one side of the Iron Triangle before moving to a similar area on the other side. We reviewed these cases carefully, since disclosed data varies enormously and a person's responsibilities on either side are not always clear. Moreover, we did not assume that these transferees were insensitive to the conflict issues. Many of them may well have taken strict measures to ensure that they had no involvement with their former employer. Our review showed that 122 transferees had job descriptions which suggested an appearance of potential conflicts of interest.

Advisory Committees

Advisory committees are composed of Government and private sector representatives to all Federal agencies and provide advice on virtually every national policy issue. Their work is often crucial to the formation of Government policy. An industry representative to such a committee can accomplish much for his or her firm, particularly in gaining early access to privileged information. Federal policies affecting industry are commonly discussed and sometimes formulated.

A network of scientific advisory bodies, especially the Defense Science Board (DSB), is critical for early access to decision in the Iron Triangle. The DSB has 24 at-large members, an unnamed number of associate members, plus the chairmen of related scientific advisory groups. All eight of the companies in the study had representatives on the key defense advisory bodies: Boeing led with 23 memberships between 1976 and 1978, followed by Lockheed with 15, Rockwell 7 and Grumman 7.

Trade Associations

While individual contractors need their own channels of influence, many common interests unite them: a need for a regular flow of information, especially on forthcoming research and development; general maintenance of defense and space spending; the rights to patents developed through contract work; a regular distribution of defense dollars among different types of weapons systems; access to defense department and NASA officials, and influence over defense procurement policy issues in DoD, the White House (OMB) and the Congress.

Defense industry trade associations have been created to help fill many of these needs. To assess the general level of activity of these groups, we surveyed twenty such associations.

The most important associations for the companies in the study included one service organization--the Air Force Association (which has industry associates)--as well as the national Security Industrial Association, and the Shipbuilders Council of America. There are several more specialized politically active groups to which many of the eight companies belong: the American League for Exports and Security Assistance, the Armed Forces Communication and Electronics Association, the Electronics Industries Association, the National Council of Technical Service Industries and the National Defense Transportation Association. All provide services, such as conventions, publications, and policy representation, and policy representation, which help knit the industry, Congress and Executive branch together. In addition, the activities of the Council of Defense and Space Industry Association, which includes six major industry trade groupings, speaks for a number of companies and trade associations.

IV. THE MILITARY ECONOMY AND CONVERSION TO CIVILIAN PRODUCTION

Disarmament and Economy in Advanced Industrialized Countries - The U.S. and the U.S.S.R.
- Lloyd J. Dumas

The Case for Economic Conversion: Massachusetts
- Bay State Conversion Group

The Lucas Plan "A Briefing Paper"
- Centre for Alternative Industrial and Technological Systems

If we in the Freeze Campaign are beginning to point out economic problems inherent in high levels of military spending, and to organize in areas where people are feeling the impact of an ailing economy, then it seems necessary to begin to educate ourselves about the various long term economic alternatives advocated at the national level to address these economic problems.

– *"The Freeze Economy"*

Economic Issues Task Force,
Nuclear Weapons Freeze
Campaign

Disarmament is often discussed only in terms of political imperatives, neglecting the equal importance of economic considerations. This section describes the process of conversion from military to civilian production at three different levels - national, state and local.

Lloyd Dumas describes the role of military production in the economies of the two industrialized superpowers, the USSR and the US. The Bay State Conversion Group describes the possibilities of economic conversion for the State of Massachusetts. "The Lucas Plan 'A Briefing Paper'", describes the development of an "Alternative Use Plan" prepared by the workers of Lucas Aerospace in Great Britain. Threatened with lay offs and plant closings the workers at Lucas suggested socially useful products to replace the company's military production.

DISARMAMENT AND ECONOMY IN ADVANCED INDUSTRIALIZED COUNTRIES - THE U.S. AND THE U.S.S.R.

"Disarmament and Economy in Advanced Industrialized Countries - The U.S. and the U.S.S.R.," Lloyd J. Dumas. Bulletin of Peace Proposals, 12:1 (1981) 1-10.*

I. Introduction: Productive Resources for Nonproductive Purposes

The use of productive resources (labor, materials, capital, fuel, etc.) for nonproductive purposes constitutes a drain on the vitality and prosperity of any economy. The issue of the use to which resources are put is so fundamental and so overriding in its impact on the ability of an economy to generate efficiently useful goods and services that economic systems are distinct as those of capitalism and communism experience similar structural problems when resources are diverted to nonproductive use. But what constitutes 'productive' and 'nonproductive' use?

Productive resource use will be defined as that which results in the production of goods and/or services that contribute to the material standard of living; nonproductive use, therefore, is that which does not so contribute. Under this definition it is clear that the manufacture of ordinary consumer goods, such as food, clothing, housing, television, etc., constitutes productive use as does the provision of consumer services such as housekeeping, cooking, haircutting, etc. Such goods and services obviously add to the present material well-being of a population. The production of producer goods and associated services, such as industrial machinery, rail transportation systems, factory buildings, supporting engineering consulting services, etc. is also productive, but through a less direct route. This class of goods and services expands an economy's ability to produce, and by so doing enhances the supply of consumer-oriented output in the future. Hence it contributes to the future standard of living. There are also categories of mixed goods, i.e., both consumer and producer goods combined, the most prominent examples of which are probably education and health care. Resource use for the supply of mixed goods as well must therefore be considered productive since they augment both the present and the future standard of living.

However, military oriented production falls into a wholly different category. It does not add to the supply of consumer goods or to the supply of producer goods and so contributes to neither the present nor future material standard of living. Such activity is accordingly classified as nonproductive. Resources put to this use can then be said to have been diverted, i.e., channeled away from ordinary productive use.

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*Keynote speech at the 'Symposium on Disarmament and Development' of the World Federation of Scientific Workers (Varna, Bulgaria: October 1980). Dumas is an Associate Professor of Political Economy and Economics at the University of Texas (Dallas).

Rather than attempting to deal with all the economic effects of military expenditures, and hence of the reductions in military spending that a move toward disarmament would represent, I will concentrate here on two primary issues: (1) the resource diversion caused by military spending and the effects of that diversion on the fundamental competence of the economy to produce; (2) the problem of economic conversion, i.e., the transfer of resources from military-oriented to civilian-oriented activity. Furthermore, attention will be focused on the U.S. and U.S.S.R., rather than a broad group of industrialized countries, partly because these two nations represent polar politico-economic systems, and partly because they are the major participants in the largest and most dangerous arms race in human history.

2. The Economic Effects of Military Spending in the U.S.

The idea that persistently high defense spending could play a major role in producing economic decline flies in the face of one of the most deeply ingrained and widely held economic beliefs; that a capitalist economic system benefits from (or at the very least is not harmed by) high levels of military expenditure. But the fact that a belief is deeply ingrained and widely held does not make it true.

Interestingly enough, Adam Smith, regarded as the father of rough and tumble laissez faire capitalism, did not share this view. On the contrary, Smith apparently saw military spending as economically parasitic, writing in his epic The Wealth of Nations (published in 1776):

> " ...the whole army and navy are unproductive labourers... Such people, as they themselves produce nothing, are all maintained by the produce of other men's labour. When multiplied ...unproductive hands, who should be maintained by a part only of the spare revenue of the people, may consume so great a share of their whole revenue, and therefore...encroach...upon the funds destined for the maintenance of productive labour, that all the frugality and good conduct of individuals may not be able to compensate the waste and degradation of produce occasioned by this violent and forced encroachment."

Whatever the payment formula formally written into major defence procurement contracts, they have all in practice been what are known as 'cost plus' contracts. These are contracts in which the producing firm is paid an amount equal to its total cost of production (whatever that eventually turns out to be) plus a profit. Operating under such a system, the firm involved not only has no risk, but also has no incentive to hold its costs down. In fact, to the extent that the firm wants to increase its sales revenue, it will have a very powerful incentive to run its costs up in order to achieve the highest possible payment for its product.

Combining this incentive system with the very large amounts of money made available for military procurement year after year by the Congress has created a situation in which military industry has bid up the prices of key resources. Chief among these are engineering and scientific personnel, and some grades of highly skilled production labor. Aside from its direct effects in increasing the cost of these resources to civilian industry, thus adding to the pressure toward inflation, the purchasing power of defence firms, backed by their rich customer (the Federal Government), has completely pre-empted a substantial amount of some of these resources, with serious long term effects on the health of the civilian economy.

For example, by one crude and conservative estimate nearly one-third of all the engineers and scientists in the United States were engaged in defense-related work. More likely, the figure is closer to one-half. Whether the actual figure is one-third or one-half, the crucial point is that a great deal of the nation's technological talent has been diverted to the development of military and military-related technology. The pre-emption by the military of such a large fraction of what we will subsequently see as a critical resource in a modern industrial society, cannot fail to have significant effects on the functioning of that part of the economy that produces goods and services which, unlike military goods, do contribute to the standard of living and the quality of life. Furthermore, it is important to understand that this magnitude of pre-emption of technological resources has been maintained for two to three decades or more.

Now, it should be obvious to anyone who has ever engaged in engineering or scientific research and development, or even had serious training in those disciplines, that the kind of new technical knowledge developed is strongly conditioned by the nature of the problems being studied and the type of solutions being sought. Since one-third or more of the nation's engineers and scientists have been seeking military-oriented solutions to military-oriented problems for the past several decades, it should be no surprise that the development of military technology has proceeded at a rapid pace in the U.S. — or that the development of civilian-oriented technology has become severely retarded there. How could it have been otherwise?

The much vaunted 'spinoff' or 'spillover' argument that military-oriented technological development produces massive improvements in areas of civilian application and thus does not retard civilian technological progress, makes very little conceptual sense, and more to the point, is massively contradicted by straightforward empirical observation. Of course, some transferability of technical knowledge between military and civilian application would be expected (in both directions), but conceptually it is difficult to see how directing attention to one area of technical research would routinely produce an efficient generation of knowledge pertaining to a completely different area.

On the empirical side, a 1974 report ('Technology Transfer and Utilization, Recommendations for Reducing the Emphasis and Correcting the Imbalance') of a committee of the National Academy of Engineering, Washington, stated:

> "With a few exceptions the vast technology developed by Federally funded programs since World War II has not resulted in widespread 'spinoffs' of secondary or additional applications of practical products, processes and services that have made an impact on the nation's economic growth, industrial productivity, employment gains and foreign trade."

As further indication of the realization of the decline of U.S. technological progress on the part of the scientific community, the seventh annual report of the National Science Board, governing body of the National Science Foundation (Science Indicators-1974), expressed concern over the serious erosion of the U.S. predominance in science and technology.

Recognition of the serious retardation of civilian technological progress is also widespread in the nation's business community. In 1976 (February 26), Business Week ran an article entitled 'The Breakdown of U.S. Innovation', the introduction of which included the phrase "...from boardroom to research lab there is a growing sense that something has happened to U.S. innovation..." Apparently that 'sense' continued to grow, because by July 3, 1978 the story had made the cover of that journal. The article, entitled "Vanishing Innovation", began, "A grim mood prevails today among industrial research managers. America's vaunted technological superiority of the 1950's and 1960's is vanishing..."

Given the huge amounts of money and technical personnel which have indisputably been poured into military-related research over the past several decades in the U.S., the severity of the slowdown in civilian technological progress would not have occurred if the 'spinoff' or 'spillover' effects had been anything more than marginal. But if the transferability of invention and innovation was and is actually low, then the decades-long diversion of at least a third of the engineers and scientists in the U.S. to military-related work would predictably have produced precisely the sort of civilian technological deterioration it has, in fact, experienced. Under conditions of low transferability it could not have failed to produce such a result.

It is widely recognized that civilian technological progress is the keystone of productivity improvement and economic growth. As the National Science Board put it in their 1977 annual report, Science Indicators: 1976,

> "...the contribution of R&D to economic growth and productivity is positive, significant and high, and that such innovation is an important factor — perhaps the most important factor -- in the economic growth of the United States in this century."

Civilian technological progress is that which is oriented to the development of knowledge leading to improved consumer and producer products and to more efficient ways of producing. These two aspects, new and better products and improved production methods, are not so distinct as it might seem, since a major source of increase in productive efficiency is the employment of new machinery and equipment embodying superior technology.

Civilian technological progress contributes to the growth of labor productivity by encouraging increases in the quantity of capital per worker and to the growth of both labor and capital productivity through the development of production techniques enabling the more efficient use of productive resources in general. Accordingly, as the development of civilian technology became increasingly retarded in the U.S., productivity growth began to collapse.

From 1947 to 1965, output per hour grew at an average annual rate of 3.3% in the nonfarm business sector of the U.S., according to the Council of Economic Advisors. From 1965 to 1978, that rate of labor productivity growth was cut in half, averaging 1.6% per year. In recent years the United States has had the lowest rate of productivity growth of any major noncommunist economy. Furthermore, the productivity growth collapse is accelerating. While the annual growth rate for 1965-73 averaged 2.1%, from 1973-78 it was 0.8%. In the first six months of 1979, output per labor-hour in the private business sector actually fell at an annual rate of 3.3%. During the second quarter of 1979, productivity fell at an annual rate of 5.7%, the largest quarterly decline recorded in this series of statistics. The series began in 1947.

The improvement of productivity plays a crucial role in the countering of inflationary pressures, for it is sustained productivity growth that offsets the effects of rising input costs. It is not the separate cost of labor, fuels, materials, and capital that is relevant to the determination of product price, but rather the combined cost of these productive resources per unit of product. Thus, the rise in labor costs, for example, might be at least partially offset by substituting cheaper capital for increasingly expensive labor, or by organizing production to use labor more efficiently or both. As long as the net result is to produce more output per unit of input, rises in input costs need not be fully translated into rises in the cost per unit of product. Correspondingly, the upward 'cost-push' pressures on price will be mitigated. But productivity is nothing more than a measure of output per unit input. Hence rising productivity permits absorption of rising prices of labor, fuels, etc. without full reflection of these resource cost increases in unit cost and thus in price.

It is therefore clear that the deterioration of productivity growth will substantially compromise this cost offsetting capability. In the absence of strong productivity improvement, rising costs of labor, fuels, etc. will be translated into rising product prices. As this occurs over a whole series of industries, a self-reinforcing rise in the general level of prices, or 'inflation', occurs. But the same mechanism also generates unemployment.

As the prices of U.S. produced goods rose higher and higher, the nation's industry became less and less competitive vis-a-vis foreign competition. Overseas markets were lost and the U.S. export position weakened. Domestic markets were lost to foreign production and the U.S. import position worsened. The progressive loss of markets induced cut-backs in U.S. based production, with high unemployment rates the result. And this problem was exacerbated by the flight of U.S. owned production facilities to cheap labor havens abroad, as one logical response to the inability to offset higher costs in the U.S. became of the productivity failure. It is thus pre-eminently the declining competitiveness of U.S. industry resulting from decreasing productivity growth that has generated unemployment even in the face of high product demand.

Productivity growth thus is 'the economic linchpin of the 1980's', as the Joint Economic Committee of Congress described it in its mid-1979 analysis of prospects for the economy. Its warning that, as the 13 August 1979 New York Times put it, "The average American is likely to see his standard of living drastically reduced in the 1980's unless productivity growth is accelerated" is precisely correct.

3. The Nature of the Economic Conversion Problem in the U.S.

As damaging as the persistence of high levels of military spending has been to the domestic economy, and as dependent as economic revitalization might be on a reversal of this situation, it is nevertheless true that the process of transition to a more fully civilian-oriented economy must be handled carefully. Producing a smooth conversion requires a clear understanding of the nature of the multifaceted transition problem.

A major part of the problem of converting technologists from military to civilian-oriented work is rooted in the differential requirements for successful military and civilian technological development. Present day high technology military products are extremely complex, and are designed with an effort to squeeze every possible ounce of performance out of the product. Whether or not this extra performance capability actually has military significance, the presumption that it does clearly underlies the practice of weapons research and development. This has led to the assignment

of large teams of technologists to the design of weapons systems, each, in effect, developing and designing a part of a part. Accordingly, the need to become expert in a very narrow range of knowledge has led to extreme specialization of engineers and scientists engaged in military-related work. In addition, the extreme priority attached to military funding, combined with the common practice of procuring weapons on an effectively cost-plus basis and the pressure for even small increments in weapons capability, has led to a virtually complete de-emphasis on the cost implications of design. In fact, more expensive designs will certainly result in increases in sales revenue and typically in profit as well to the firms which generate them.

Successful design for the civilian market place, on the other hand, requires very heavy emphasis on the implications of the specific design for the cost of producing the ultimate product. This implies that designers, rather than being extremely specialized, should have a fairly clear concept of the overall design of the product and the interactions of its subcomponents. This, together with a basic understanding of the effects on cost of modifying the design in one way or another, will enable them to trade off changes in one part of the design against changes in the other to achieve desired product performance at the lowest possible cost. Keeping production cost down enables the price to be kept at a level which will make the product attractive to potential customers, and hence bring expanded sales and profit to the firm.

Because of these differences, engineers and scientists performing defence work must be retrained and re-oriented before they can be successful in civilian research and development. Complete retraining is clearly not required, since much of the mathematical, scientific and engineering knowledge they already have is also required for civilian work. But despecialization and increased cost sensitivity are required to establish firm connection with civilian design realities.

The conversion process must also be extended to the educational institutions responsible for the training of engineers and scientists. These institutions have altered their curricula to emphasize specialization, especially in areas and sub-areas of interest to the military, and strongly de-emphasize training in cost-related matters. Instruction in mundane civilian-oriented areas like, for example, power engineering was curtailed or eliminated, particularly at the 'best' schools. All this may have been an appropriate institutional response to the changing shape of the high-pay/high-presitge opportunities available to their graduates. And yet, these changes meant that even those engineers and scientists who did go directly into civilian areas were to some extent less than optimally trained for the development of civilian-oriented technological progress. Therefore, this response served only to exacerbate the deterioration of U.S. civilian technology and thus the nation's economic problems.

The inability of military-oriented engineers and scientists to move into civilian-oriented research and development without conversion retraining is indicated by the commonly observed tendency of technologists, laid off because of the termination of a defense contract, to move to another geographic area to follow the contracts, accept nonengineering or nonscientific work, or simply remain unemployed until the contracts return. This tendency has been read by some as an indication that civilian technology is not starved by the diversion of technological personnel to military areas as I have argued, since they are not grabbed up by civilian research programs when they do become unemployed. But the failure of these technologists to be readily absorbed into civilian industry is due to the inappropriateness of their training, not an overall lack of demand, and certainly not a lack of national or commercial need.

As for the issue of management conversion, the managements of military industrial firms operate in a very different atmosphere from that which prevails in civilian-oriented enterprise. For one thing, defense firms have, in practice, only one customer — the United States Government. Defense firms cannot sell their products to civilian customers in any case, and can sell to foreign governments only with the direct and specific approval of the U.S. Department of Defense. Even so, weapons sold to foreign governments were originally designed, developed and produced for sale to the U.S. Government.

The one-customer orientation produces a very different sales and marketing situation from that faced by civilian firms. Rather than knowing how to run an effective electronic and print media advertising campaign, how to survey markets for public acceptance of a new product line, how to price a product for penetration into new markets or expansion of existing ones, etc., it becomes critical to know the minute detail of the Armed Services Procurement Regulations, to develop good working relationships with key government procurement personnel, and to be able to lobby effectively with members of the Congress.

Another critical difference is that the single customer does not itself have to sell its product in a market place. It does not therefore have to worry either about the effects on the ultimate price of its 'product' of paying too much for the goods it buys, or the danger of its being forced into loss or bankruptcy by a drop in its sales if the equipment it purchases does not perform well.

This strongly interacts with a third critical factor, the extremely high priority accorded to defense procurement, currently supported by at least national public acquiescence, if not implicit consensus. This not only assures that the Defense Department will continue to be a very rich customer, but also that its purchase decisions will be readily validated by both the Congress and the President. Thus, the wealthy customer that military industry services faces no economic market test, and only the very loosest political constraints.

The net effect of these last two factors has been to guarantee at least higher revenues and typically higher profits as well to those military firms which are most effective in running up the cost of the products which they are contracted to produce, often regardless of whether or not these products perform as they were supposed to. A management operating in such a milieu will become very effective at finding ways of producing at high cost. But this sort of management training and experience is completely inappropriate to successful operation in civilian markets, where holding costs down, not running them up, is the crucial skill.

There is little question then, that whether military-oriented managements are turned to the supervision of the production of goods and services sold in the civilian market place or for civilian use by government, they must be retrained and re-oriented as a prerequisite for successful conversion.

Now let us turn attention to the case of the Soviet Union.

4. The Economic Impact of Military Spending in the U.S.S.R.

The Soviet economy is basically an economy of priorities, and the priorities become most serious in terms of supply considerations. Supply is perhaps the central problem for both national central planners and managers of individual enterprises in the U.S.S.R. There is, on the other hand, very little evidence of a shortage of demand.

Under conditions of chronic aggregate shortages the priorities used in the allocation of productive resources become especially critical to the functioning of the economy. Every industry has a different priority or ranking associated with it that determines, in effect, where it stands in the line of industries waiting for needed supplies of productive resources of all sorts (engineers and scientists, production workers, materials, fuels, equipment, etc.). Military industries, and the portions of other industries that support them, are at the head of every line.

The top priority accorded to military industries in effect shrinks the resource base of the entire civilian economy. They receive inputs of the highest quality in ample supply, leaving all of the civilian industries to vie for the remaining resources. Their capacity for pre-empting resources from the civilian economy categorizes military industries as a privileged sector, as compared to ordinary civilian industries.

As in U.S. military industry, the emphasis in Soviet military industry is on high quality, high performance products — costs of production are a strictly secondary consideration. The U.S.S.R. seems to avoid much of the tendency to excessive and unnecessary features, so-called 'goldplating', that is a common practice in U.S. military production. Soviet designs also tend to pay less attention to aesthetics and more to basic functionality. But, the same set of fundamental research and design criteria apply to the military industrial activities of both nations.

The impact of Soviet military industry on the U.S.S.R.'s civilian economy goes beyond the direct diversion of resources into the mililtary sector. There is what could be called a 'contingency diversion' that also hampers efficiency. Civilian production facilities and even civilian products have sometimes been designed so as to allow ready convertibility to military oriented production -- e.g., tractors that have been designed with caterpillar treads rather than wheels to facilitate the switching of production to tank type vehicles. Practices of this sort can easily result in suboptimal production adding to the distortion of the civilian economy.

One more point about the operation of military industry in the U.S.S.R.: the head of a large Soviet military enterprise will typically also be a ranking official in the Communist Party and a high ranking uniformed military officer. Such an individual holds a position of simultaneously high economic, political and military authority and power, and will accordingly tend to be a major force in the society, particularly in the region where the enterprise is located. This is especially true should the enterprise be located in a smaller and/or more remote city.

As indicated earlier, the basic casual nexus through which military spending has damaged and continues to damage the Soviet economy is similar to that operative in the U.S. case. By directly diverting productive resources from the civilian economy, the military sector drains civilian industry rendering it less capable of providing quality standard-of-living goods and services cost effectively, and in sufficient quantity.

In the U.S. case, much emphasis was laid on the pre-emption of engineering and scientific talent into military related activity — the same is, of course, also true in the U.S.S.R. But it is probably true that the drain of other resources is somewhat more of a problem in the U.S.S.R., partly because the economy is younger and not as large, and partly because the resource base itself is smaller.

As has been discussed, the economic damage done by the military burden in the U.S. surfaces mainly in the form of simultaneously high inflation and high unemployment, through the intervening variable of deteriorating productivity. In contrast, in the U.S.S.R., the damage surfaces mainly in the form of chronic problems of supplying sufficient quantity and quality of goods and services — particularly consumer goods. There are two main reasons for these differences.

First, the military economy of the U.S. developed, post World War II, alongside a well developed and booming civilian economy. In fact, the U.S. was the only major industrial nation in the world not devastated by the horrors of that war. The Soviet military economy, on the other hand, developed alongside a civilian economy massively damaged by that conflict and itself struggling hard to develop. Thus, the Soviet civilian economy was never able to work on breaking its chronic supply problems with a major, systematic and sustained effort. On the contrary, shortages were continually made more severe by the demands of the military economy under the impetus of an escalating superpower arms race.

Second, the differences between the capitalist and communist economic systems make it easier for the latter to prevent unemployment and cope with inflation. It is clearly beyond the scope of this discussion to present a full analysis of this point. But the essence is this: a capitalist economy must rely on the voluntary actions of individuals seeking private economic gain (in present forms, with more or less government intervention) in order to provide employment, while relying on such private decisions, along with the impersonal mechanism of competition and governmental control of the money supply to control inflation; a communist economy, on the other hand, features direct government control of both employment opportunities and prices, though the latter tends to be somewhat more subject to external influence through rising import costs.

It is important to understand, then, that a centrally planned socialist economy is no more and no less able to override the negative economic effects of military spending than a capitalist economy. The impacts of resource diversion are simply superordinate. The only way to redevelop an economy severely stressed by the burden of military spending is to rechannel resources back into productive civilian activity. Once again, we must turn attention to the problem of economic conversion — this time in the context of the U.S.S.R.

5. Economic Conversion in the U.S.S.R.

It has often been stated that the transfer of resources from military to civilian activity is no problem in the Soviet Union, since the economy is centrally planned. It is only necessary to order the shift, and it will quickly and smoothly occur. But this is just not true.

For one thing, the problem of conversion of engineers and scientists is very similar to that in the U.S. Their salaries and bonuses are generally higher than in civilian industry, and this may create something of a vested interest on their part in trying to encourage the maintenance of military activity. Far more importantly, they are accustomed to designing for high performance with little attention to cost. This is a very different milieu from design for adequate performance, large scale production and low cost which are the hallmarks of civilian industry.

Engineers and scientists engaged in military-related activity must be retrained and re-oriented to the characteristics of the civilian sector or they will, as their U.S. counterparts will, design products so expensive that no one will be able to afford them.

Now, it might be objected that empirical observation refutes the existence of an industrial conversion problem of this nature in the U.S.S.R., for a significant fraction of the output of enterprises classified as in the military sector consists of civilian product -- and high quality civilian products at that. The contradiction here is apparent, but not real. Civilian products produced by Soviet military enterprises may be of generally higher quality than those produced in ordinary civilian enterprises, but that is primarily because they are produced under conditions of access to all the best inputs in sufficient supply. And any excessive expense is likely to be absorbed within the subsidy system. This super priority position would not necessarily continue after the termination of the military mission so-to-speak of these enterprises. This issue is of particular relevance to the problem of management conversion.

The conversion of management personnel in the U.S.S.R. must cope with three sorts of problems: (1) operating in civilian industry implies the continuing requirement of managing supply difficulties, both with respect to quantity and quality of required resources, while this requirement is much less serious in managing military enterprises; (2) cost constraints are much tighter in civilian than in military industry (a situation very similar to that in the U.S.); and (3) shifting managers out of top priority military industry into lower priority civilian industry must cope with a possible, in fact likely, diminution of political, military and economic status and authority as well as potential reductions in salaries and bonuses (which are higher in military industry); military managers may thus be resistant to conversion and, as pointed out earlier, they wield considerable societal influence. Consider each of these in turn.

Supply problems are such an integral part of manufacturing in civilian industries that one of the chief skills of managing such enterprises lies precisely in coping with shortages, breaking supply bottlenecks and generally keeping production going in the face of such problems. So important is the function of materials and equipment acquisition under these conditions that a special role of 'tolkach' or expediter is created with that main duty in civilian enterprises. The tolkach is expected to do what is needed, to the extent possible, to assure a continuing flow of the requisite inputs.

There is no tolkach required in military enterprises. Military managers facing a shortage or breakdown in supply can straightforwardly order whatever is needed and require its expeditious delivery with all the effectiveness that their conjunction of military, political and economic authority implies. Thus, military managers must undergo significant retraining and re-orientation to function effectively in the 'new world' of the civilian sector. Of course, as conversion proceeds, supply problems will ultimately lessen for civilian industry as resources locked into the military sector are released and as the civilian economy in general develops.

The relative cost insensitivity problem is quite similar to that of U.S. military industrial managers. Though Soviet managers will not have to sell their civilian products in the same sort of market place as their U.S. counterparts, the importance of producing at a cost low enough to be fully coverable by a reasonably low price is real and substantial. Once again, retraining and re-orientation is clearly required.

The possibility exists that military managers might equate conversion with demotion and hence create a significant force resisting the transfer of resources (and perhaps reinforcing the more hawkish voices in the country). This must be considered a most serious problem, one worthy of some serious and creative thought. However, some obvious solution strategies come to mind: (1) certain civilian industrial activities

to which military enterprises might convert might continue to be assigned high priority; (2) appeals could be made to the patriotism and social consciousness of the managers; (3) greater public acknowledgement of the services and accomplishments of managers of converted enterprises — acclaim impossible under the conditions of secrecy surrounding military enterprises -- might well compensate the managers effectively. (This might also prove a valuable strategy with respect to engineers and scientists). At any rate, this part of the conversion problem must be forthrightly confronted.

In both the U.S. and the U.S.S.R. advanced planning in detail for economic conversion is an absolute prerequisite for a smooth and efficient conversion process. There is no way of avoiding or side-stepping this task, because neither the retraining, re-orientation and relocation of personnel nor the alteration of facilities and preparation of designs, prototypes, etc. can be accomplished instantaneously. It is not unreasonable to estimate a required lead time on the order of two to four years. And lead time requirements are also not dependent on whether the economy is organized along capitalist or communist lines — they are far more dependent upon factory level considerations.

6. Further Research and Action Required

The problem of modern day economic conversion (as opposed to the quite different experience of reconversion immediately after World War II) has been much studied for the U.S. and is well, though not widely, understood. But much less is known about the economic impacts of military spending and the problems of conversion in the industrialized socialist countries as these problems exist today. I urge that more attention be given to these questions in the research and writings of my Soviet and East European colleagues.

At the higher levels of government in both the U.S. and the U.S.S.R. these issues receive little, if any, consideration. This situation cannot be permitted to continue. As peace activists as well as researchers, we have an obligation to use whatever means are available to us to try to raise the degree of awareness of the critical nature of these problems in central government and the sense of obligation to confront them.

The economic damage being done to both the U.S. and Soviet economies by the continued escalation of the arms race is cumulative. Therefore, the longer it is allowed to persist, the harder it will be to rectify. The situation has already reached the point at which both countries have, I believe demonstrably, begun to 'undevelop', i.e., to go backwards on the scale of economic development. This undevelopment is an extremely serious matter, and it is quite directly a result of the continuing pursuit of the arms race. For the sake of the peoples of the U.S. and the U.S.S.R., the arms race must be reversed so that valuable economic resources can be directed to redeveloping both nations.

Finally, that the arms race is a path to economic disaster is troublesome enough, but it is also a threat to the physical survival of humankind. It is not a viable path. If it is not reversed and reversed soon, it will lead, either by intentional action or catastrophic accident, to the destruction of all that any of us hold dear. For this reason as well, the reversal of the arms race must be the top priority of all human beings who insist on the most basic of human rights — the right to a future.

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Melman, S., 'Barriers to Conversion from Military to Civilian Industry -- In Market, Planned and Developing Economies,' (prepared for the United Nations Centre for Disarmament, Ad Hoc Group of Governmental Experts on the Relationship Between Disarmament and Development: April 1980). to which this present analysis is heavily indebted.

In my plant there is a core of workers who are critical of military spending... (but) military workers have what I consider a healthy skepticism towards the feasibility of conversion by individual plants. They see the high unemployment in the civilian sector. Would anyone be willing to give up the security of government contracts when the marketplace cannot provide jobs? They are also quick to point out that even if one plant were to quit military production it would be picked up elsewhere and not have any impact on slowing the arms race.

The nature of military production is such that it doesn't provide long-term security. The occurrence of layoffs is common. Also, workers are beginning to feel the pinch of concessionary contracts. It is in these two situations (layoffs and concessions), that economic conversion can play a vital role. It must be portrayed as the necessity for economic security. Conversion is our plant closing legislation and our bargaining chip."

-Vicki MacKenzie

a defense worker in a plant that builds gun mounts for the Navy, UAW Local 683, Minneapolis, Minnesota

THE CASE FOR ECONOMIC CONVERSION: MASSACHUSETTS

"The Case for Economic Conversion: Massachusetts," Sections IV-IX (June 1, 1982) prepared by the Bay State Conversion Group, Watertown, MA.

MASSACHUSETTS DEFENSE DEPENDENCY

CONTRACTS

"THE MASSACHUSETTS ECONOMY RELIES HEAVILY ON DEFENSE WORK COMPARED TO OTHER STATES AND IN TERMS OF THE RESOURCES REQUIRED TO PRODUCE DEFENSE RELATED ACTIVITY" (Defense Spending and Massachusetts Employment. 1969-1978, booklet put out by Massachusetts Division of Employment Security, DES.) In 1980, Massachusetts ranked 5th in prime contract* awards per capita, winning 5.6% of the prime military contracts, while 2.5% of the national population lives in the Commonwealth. In FY 1981, Massachusetts firms were awarded $4,604,946,000.00 in prime contracts from the Department of Defense. General Electric and Raytheon, the companies with the largest contracts in the state, ranked 4th and 8th nationally in military contracting in 1981. MIT was 2nd in the ranks of universities receiving DoD contracts for military research in FY 1981.

There is substantial reliance on military contracts both by business and universities in the state. High-tech companies expect to benefit even more from Reagan's emphasis on sophisticated electronics for the military. Only 17% of the state budget will come from the federal government reimbursements for non-military programs. The total of prime contracts from the Department of Defense to Massachusetts companies is equal to two-thirds of the 6.7 billion dollar total state budget proposed by Governor King.

Most military prime contracts go to missile and space systems, aircraft engines, electronics and communications equipment. In 1978, Massachusetts ranked 2nd in the percentage of aircraft and spare parts prime contracts, 2nd in missile and space contracts and 2nd in RDT&E contracts. With 9.3% of the total national RDT&E awards in FY '81 (representing 20% of the prime contracting done in the state), Massachusetts companies and institutions are playing a significant role in the creation of a new generation of first strike weapons, which dangerously aggravates the current arms race. Of those contracts, over 90% are concentrated in the northeastern portion of the state.

* Prime contract awards over $10,000 are listed in DoD reports each year. The FY '81 list includes over 1000 contractors in Massachusetts. The reports do not indicate what part of the prime contract award is, in turn, subcontracted out by the prime contractor and it is impossible to get accurate information on subcontracting in Massachusetts. However, government figures do show that approximately the same dollar amount is contracted into Massachusetts as is contracted out of state.

EMPLOYMENT

It is impossible to discuss the Massachusetts economy or conversion without focusing in on the high-tech industry. The economic future of the state is tied to the growth of that industry, and the industry is tied to the military. The Hi-Tech Council estimates that one-third of the current employment in the field is in government sponsored military and aerospace research and manufacturing.

The Massachusetts DES estimated that 608,400 people were employed in defense related work in 1978. (Somewhere between 15% and 22% of total employment in the Commonwealth as DES figures are estimates and not totally consistent.) In only three out of the seven defense industries did the percentage of manufacturing employment increase from 1975-1978. These three are those identified as Massachusetts' defense-oriented industries. They are electrical and non-electrical machines, transportation equipment, and instruments and related products; all areas considered to be high-tech industries. All the other sectors have declined in the period studied and are expected to continue to do so.

TOP TWELVE CITIES IN MASSACHUSETTS FOR DEFENSE PRIME CONTRACTS--FY 1980

	$ in Prime Defense Contract	Co. with largest contract (at least 50% of total)
Burlington	124,628,000	RCA
Pittsfield	132,424,000	GE
Waltham	147,978,000	Raytheon
Wayland	155,384,000	Raytheon
Wilmington	163,201,000	Avco
Cambridge	168,438,000	Draper Labs
Andover	171,861,000	Raytheon
Lexington	209,802,000	MIT
Needham (inciuding Needham Heights)	211,651,000	GTE/Sylvania
Lowell	324,064,000	Raytheon
Bedford	700,376,000	Raytheon
Lynn (including West Lynn	1,194,101,000	GE

(For more prime contracting information, contact Bay State Conversion Group)

Until recently, the high-tech industry suffered along with the rest of the business community in the recession of a few years ago. Layoffs in the state reached a postwar peak. Some of these layoffs can be traced directly to the connection between the Massachusetts industry and defense contracts. When the Reagan administration scrapped the "racetrack" approach to basing the MX missile, layoffs resulted at GTE. Other changes in the MX program meant the loss of a 21 million dollar contract at

Draper Lab. On the other hand, Massachusetts contractors expect to end up doing a lot of MX work and GTE is planning to open a new facility to handle its future MX work. The high-tech industry, as well as responding to business cycles, is subject to the boom and bust cycles associated with military contracting. What does the future hold if the state continues its heavy dependence on defense spending?

THE FUTURE -- HIGH-TECH

Massachusetts has a historic tie to "high-tech" industries. Not so long ago textiles and leather work (shoe and boot manufacturing) were high-tech industries and Massachusetts was a leader. Today high-tech industry is defined as those industries with a high concentration of scientific research, or with a high degree of dependence on electronic components. By either of these definitions this newest sort of high-tech industry has reindustrialized the state of Massachusetts. Will this new industry go the way of the textile and leather industries, or is it here to stay? And must it remain tied to the military in order to survive?

Using the Economic Policy Analog Model at U. Mass/Amherst, in 1978 the DES examined projected defense related employment in Massachusetts from 1978 to 1983, assuming a 10% increase in defense contracting in the state. Their conclusion was that although there would be an initial increase in employment the first year, this would taper off over the next four years so that the total increase in employment would be very slight. The reason for this is that defense industries tend to pay higher wages so others would be forced to pay higher wages to compete, and this would lead to substitution of capital for labor or to further flight of plants from the area to places where wages are less.

For people interested in disarmament, conversion of the high-tech industry to a civilian one presents a real challenge. When the textile and leather industries left the area, unemployed workers remained, prosperous mill towns became depressed areas. No one wants to end military production here with the same results.

One possible direction for this State is to become the "Japan" of the United States. Comparisons between Japan and the U.S. in development of high-tech products shows that while we support large programs to achieve specific defense related technology, the Japanese support technological development for the sake of economic development.

To give a specific example, we are supporting work on VLSI (Very Large Scale Integration) for defense (e.g., cruise missiles), while in the same field of research, the Japanese are working toward practical commercial goals (computer memories). The DoD program will only indirectly influence commercial technology. Another area in which the Japanese are pulling ahead is photovoltaics, an important area of research for both of our oil dependent nations, in which they have just announced a program to develop reasonably priced commercial units. Our support of photovoltaics is minimal, and historically largely a spinoff of the space program.

The Japanese are currently planning a government sponsored project that will take 10 years, cost more than $400,000,000 and produce a fifth generation of computers. A similar commitment in Massachusetts could have a profound effect on our position in world markets. According to Dr. Robert Jastrow, founder of NASA's Goddard Institute at Columbia University, "...if the Japanese win out - and I have profound respect for their abilities - then we will lose elements vital to our strength and happiness. We will become essentially a colony." (Boston Globe, December 25, 1981.)

Comparison with Japan is not meant to suggest that quality control in this country can't be as good as in Japan, or that workers in this country aren't as productive, or that we should remodel our society and economy after the Japanese. What we should do, however, is look at the Japanese priorities when it comes to research and development, and learn a lesson from their success and their low military spending.

More high-tech workers in Massachusetts are becoming concerned with the defense related nature of the available jobs. One sign of this concern is the formation in the Boston area of the High Technology Professionals for Peace. HTPP is an organization of engineers, scientists, and technical workers who are concerned about the dangers of nuclear war. HTPP's activities are primarily aimed at educating both high-tech workers and the general public regarding the dangers of the current arms buildup. In addition, the organization has established an employment agency to help high-tech workers currently employed in defense contracting to find new positions in non-military work. (For more information see listing in Appendix A.)

Social service cuts related to increased military spending have lengthened the unemployment lines in our state. Military spending in our state does not promise to alleviate the unemployment problem. In summary, spending more on military defense technology and production has decreased the economic viability of our state and resulted in more job insecurity for Massachusetts workers.

ALTERNATE USE PLANNING

Alternate Use Planning is a method of converting the militarized economy into socially useful production meeting community needs. For the planning to be successful it must a) be based on a thorough and accurate evaluation of current skills and equipment available to be converted, b) produce realistic possible plans for the future, and c) involve all those affected.

First, the authors of an alternate use plan for a firm must know the vital statistics of the facility involved: its size, the varieties of machines used for manufacturing, the experience mix of the labor force, the attrition rate, turnover, etc. These figures are most easily gathered by the workers themselves.

Secondly, careful assessment of the needs and resources of the community must be made. This should include the history of the community, its type of government, demography, and major public issues. Considerable community participation is necessary for a successful Alternate Use Plan.

THE LUCAS MODEL

The most complete and detailed model of an alternate use plan has been developed by the workers at Lucas Aerospace in Great Britain. In 1974 the Combine Committee representing shop stewards at all the Lucas plants and in all the unions at Lucas decided to draw up an Alternate Corporate Plan. The plan, based on suggestions and answers to questionnaires distributed to rank and file workers came up with 150 socially useful products which could be produced with existing equipment and skills.

LUCAS SHOP STEWARDS CORPORATE PLAN QUESTIONNAIRE (58)

Factory

A. (1) Size: square feet of floor space.
(2) Other space: car parks, perimeters, land, etc.
(3) Total space.

B. (1) Age and condition of buildings.
(2) Suitability of buildings for modern production.

C. (1) Location and access, e.g., near motorway, main road or railway link.
(2) Other services, e.g., Telex, computer, gas, etc.

Workforce

A. (1) Total number employed.

B. (1) Total number hourly paid.
(2) Number skilled.
(3) Number semi-skilled.
(4) Number unskilled.

C. (1) Total number of staff.
(2) Number of design, development, etc.
(3) Number of other technical staff, e.g., Production engineering, contracts, technical sales.
(4) Number of administrative staff.
(5) Number of supervisory staff.

D. (1) General availability of labour.
(2) Availability of skilled labour.
(3) Availability of design and other technical staff.

Products

A. (1) List present product range.
(2) List subcontract work out and number of hours.
(3) List subcontract work in and number of hours.
(4) Hourly rate for manufacturers.

B. (1) List new products made in past.

C. (1) List new products under development.
(2) Any other new products outside aircraft work which your plant could design, develop, and manufacture.
(3) Any socially useful products which your plant could design, develop, and manufacture.

Equipment

A. (1) Total number of machine tools.
(2) Breakdown into groups, e.g., lathes, mills, N.C. machines, etc.

B. (1) Other production facilities, e.g., Heat treatment, plating, welding, etc.

C. (1) Details of equipment, e.g., age, value, condition.

Running the Plant

A. (1) How could the plant be run by the workforce?
(2) Could existing 'line' managers still be used?
(3) Have you got a joint staff/works Committee?
(4) Have you set up a local Corporate Planning Committee?

Given a suitable questionnaire, workers at plants in the U.S. could answer questions about their work areas. The benefit of these questionnaires is twofold. The information is obtained while allowing the workers - who will be directly affected by a conversion program - to directly participate in the planning stages. The questionnaire should encourage creativity as well as producing an accurate catalog of equipment and skills available. At least one question should refer to other useful products that could be manufactured with little or no alteration to the existing facilities. Usually, those individuals who have worked with a given machine for any period of time have thought of different products they could be manufacturing. As many as possible of the current employees must be accounted for in the plan. The plan must include requirements for retraining facilities, machine alterations, shifts in pay scales, personnel changes, etc. the more detailed a plan is, the less confusion it creates.

Between 1970 and 1974, 5000 workers at Great Britain's largest private military contractor, Lucas, lost their jobs. As a result, the planning was begun by unionists that resulted in the Alternative Corporate Plan being presented to management for negotiation in 1976. Although the Lucas workers have not won implementation of their comprehensive plans they have seen some of their ideas realized and have almost completely prevented layoffs for five years. As a result of the initiatives of the Lucas workers and the Centre for Alternative Industrial and Technological Systems (CAITS, organized by the Lucas workers with NE London Polytechnic), other shop stewards committees have prepared their own alternative plans for major British industries like Vickers and Rolls Royce. In addition to producing plans, alternative products have been built including a novel heat pump, an energy efficient low pollution diesel/electric power pack, and road/rail vehicle. In addition to looking to the examples of other conversion projects, it is instructive to realize that some companies have already converted on their own. The recurring "boom and bust" cycle for companies contracting with the Department of Defense has led some companies to seek alternatives. The Kaman Company of Connecticut produced sophisticated military helicopters. After careful study, Kaman successfully converted to the manufacture of windmills for electric power generators and acoustic guitars, maintaining their technological level and job security for their workforce.

MASSACHUSETTS PROJECTS

The Bay State Conversion Group, which prepared this booklet, has, to date concentrated on producing printed resources, and participating in workshops and other educational activities. However, we have had preliminary contacts with workers at the GE plant in Lynn and General Dynamics shipyard in Quincy, and are planning to do more direct conversion work at defense facilities.

At the same time of this writing, there is a group doing research intended to lead to an alternate use plan for the Draper Lab in Cambridge. The Draper Conversion Project would welcome more participants and can be contacted through the Bay State Conversion Group. There are also citizens in Cambridge discussing how to follow up on a 77% vote in favor of a resolution calling for no further development of nuclear weapons in the city, a vote that would seem to require city wide conversion planning.

In addition to these beginnings, there are three Massachusetts disarmament projects that are related to the economic conversion issue. The Jobs with Peace Campaign is rooted in the economics of our military budget. The Ailanthus Group is trying to disarm Draper Labs by appealing to the workers. And the Worcester County Peace Network has begun weekly vigils at the GTE Westborough site.

Jobs with Peace

Part of a national campaign, the Massachusetss JwP group has initiated and succeeded in passing Jobs with Peace resolutions in the last two elections. Their disarmament work consists of education about the militarization of the economy and getting out the vote in favor of curtailing military spending on nuclear weapons and programs of foreign military invervention and transfering this money to local jobs and programs. To date their efforts have succeeded in getting nonbinding referenda passed in three out of four senatorial districts where it was on the ballot in 1980 and in the city of Boston in 1981. As part of their ongoing educational work JwP sponsored a jobs with peace week in May, 1982, which included lectures, public meetings, film showings, and the publication of a "Boston Peace Budget". This budget details sensible ways to cut military appropriations with Bostons's share as $117 million for housing, health, education, transportation and other essential services. JwP will continue their effort at the ballot box in November, 1982 in Springfield, Worcester, Lowell, New Bedford and Westport.

Ailanthus: A non-violent witness group for peace

Ailanthus meets Sunday nights at 7:30 pm at Hailey House, 23 Dartmouth Street, Boston, MA 02116 (262-2940), for scripture study, and vigils at Draper Laboratory from 7:30 am - 9:00 am every Monday (Tuesday if Monday is a holiday).

Worcester County Peace Network

One of the activities of this group is to hold a weekly vigil with signs and posters at the GTE facility that is being built in Westborough to house the upcoming GTE work on the MX missile.

CONVERSION LEGISLATION

The late Walter Reuther, President of the United Auto Workers, proposed over a decade ago, that a portion of each defense contractor's profits be set aside as a "conversion reserve to be held in a government trust fund", which would assist disrupted workers and the communities in which they live. Legislation along those lines has been introduced in recent years in both the Senate and the House. No such legislation has yet been passed, but a bill is pending in the House.

> DEFENSE ECONOMIC ADJUSTMENT ACT H.R. 943, introduced by Congressman Ted Weiss (D-NY). This bill would provide economic assistance to those communities, industries and workers affected by significant reductions in defense expenditures. The legislation would create a Defense Economic Adjustment Council in the Executive Office of the President and would establish an economic adjustment trust fund to finance conversion of defense facilities to peaceful production. Alternative Use Committees would be formed to undertake economic planning and research in affected communitites. Workers displaced by reductions in defense contracts would receive financial assistance and employment training.

In the late seventies the Connecticut State Legislature passed "Public Act 79-230" in response to public concern about Connecticut's economic dependency on defense spending. The law had two components:

1) providing consulants to medium and small manufacturers to expedite the process of defense conversion and adapting to new technologies;

2) funding a study to analyze the feasibility of diversification of defense-oriented industry to non-defense functions, to examine possible tax incentives, to recommend plans for implementation and to consult representatives of state, labor, defense, and non-defense oriented business.

This latterly described report entitled "Defense Dependency in Connecticut" was published February 1, 1980. A similar study could be commissioned by the Commonwealth of Massachusetts.

Copies of the House Resolution are available from your Congressperson, and the Connecticut report is available from Department of Economic Development, State of Connecticut. Both are the sorts of legislation that will help make the path to conversion easier.

A related piece of pending legislation is:

WORLD PEACE TAX FUND ACT HR 4897, introduced by Congressman Ron Dellums (C-CA). This bill would amend the Internal Revenue code of 1954 to provide that a taxpayer conscientiously opposed to participation in war may elect to have his/her income, estate or gift tax payments spent only for nonmilitary purposes. A fund would be established to receive and distribute to qualified peace-related activities the portion of such individuals' tax payments that would otherwise go to military spending.

CAN CONVERSION WORK?

The major study done by the Federal government in 1969 "The Potential Transfer of Industrial Skills from Defense to Non-Defense Industries" shows that almost all jobs are able to be transferred. A similar study could be done in Massachusetts, but we are confident that the result would be the same: some retraining would be required but jobs could be transferred.

On a small scale conversion already has worked. In addition to the experience in this country after the two world wars and the examples given earlier in this booklet, recent base and plant closings demonstrate conversion in action. Between 1961 and 1977, 75 communities and 68,000 workers were hit with a major contract loss or military plant closing. With federal adjustment aid and planning to diversify the local economies 78,000 jobs were created. 48 bases were converted to 41 schools.

Perhaps the question should be phrased differently, "Can we afford not to have economic conversion?" The answer is clear. Without conversion we, in the Commonwealth and in the nation, will have no chance of emerging from our current economic crisis. Without conversion the arms race will continue to escalate and increase international insecurity. Without conversion we will not be able to unite the increasing numbers of people working for disarmament with those working in defense industries to create a future without military dependency.

Through conversion we can create a healthy economy, based on local planning, which meets community needs and provides us with the quality of life we all deserve.

Proposing conversion, or diversification, means that unions take steps to investigate alternate goods they could produce. This is not a standard role for unions – becoming involved in what to produce and how to invest profits. Its still a new idea, but it can be done. The most widely known example was at Lucus Aircraft in England, where the union drew up a detailed Alternative Use Plan that won international attention.

– Steve Meacham

Member of Shipbuilders Local 5,
Quincy, Massachusetts

THE LUCAS PLAN: "A BRIEFING PAPER"

"The Lucas Plan 'A Briefing Paper'," (May 1982) from Centre for Alternative Industrial and Technological Systems (CAITS), London.

The Alternative Corporate Plan drawn up by the Lucas Aerospace Combine Shop Stewards Committee (LACSSC) is in fact the most detailed Plan for a Company ever made by its workforce, and it is also the most 'radical'. The Committee broke new ground in going far beyond traditional trade union defensive activities to propose products which could be developed as alternatives to redundancies and to create new jobs. These proposals were not simply about job creation however for the Plan challenges the right of the Company to make policies and challenges the profit motive directing these policies. The central theme of the Plan is that the products should have a 'social use': the Combine placed firmly on the agenda production for use, not as a vague aspiration for the future but as an objective to be bargained for here and now.

The Plan itself (all 1200 pages of it!) has never been published in full, but the main themes and some of the product proposals are in a negotiating document* published in January 1979. The full story of the development of the LACSSC and the Plan up to mid-82 is given in the Lucas Plan: A New Trade Unionism in the Making**, a book which is essential reading for all those who want to understand just how the Combine developed, what the Plan is all about, and what happened since it was launched in January 1976. This Briefing Paper provides only an outline of the Plan and its progress.

The Plan is not a blue-print the Combine thought could be implemented in full. Rather, it is an approach to trade union organization and objectives which was being developed in the LACSSC before 1976 and has persisted in many forms since then, both in Lucas Aerospace and beyond..

THE BACKGROUND TO THE PLAN

1. THE COMPANY

Lucas Aerospace is part of Lucas Industries, a large British-based multi-national which includes CAV, Girling and Lucas Electrical, and owns several subsidiaries or associated companies in every continent. The present structure of Lucas Aerospace was formed in a massive re-structuring

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* Lucas Aerospace: Turning Industrial Decline into Expansion, Lucas Aerospace Confederation Trade Union Committee, 1979, CAITS, L10.00.

** The Lucas Plan: A New Trade Unionism in the Making, Dave Elliott and Hilary Wainwright, 1982, Allison & Busby, L2.95.

and rationalisation programme in the 1960s, with the active assistance of the Industrial Reorganisation Corporation, and in common with the programme of rationalisation taking place in other companies, such as GEC, with government assistance.

In 1967 Lucas Industries had 5 aerospace sites in the UK. By 1970 the new division Lucas Aerospace had 13 sites and 17 factories, and the Company was Europe's largest designer of aircraft systems and equipment, electrical generating systems and switch-gear, engine-starting, de-icing, flying controls, fuel management, thrust-reverse and combustion systems, instrument-lighting and cockpit transparencies. It also had interests in medical technologies and machine tools.

About half of Lucas Aerospace business is related to military aircraft or other defence work. Nearly half of its orders are from Rolls Royce and about a quarter directly from the Ministry of Defence. The Company has been involved in work on Concorde, the TU144, the A800 airbus, Lockheed Tristar, RB211, Jaguar, and European Multi-role Combat Aircraft.

2. THE UNIONS

There are ten major unions in Lucas Aerospace, organised by occupation and with local branches which include representatives from different plants and companies in the area. The level of collective bargaining varies by union.

The CSEU.

The invidivual unions are represented on the Confederation of Ship-buiding and Engineering Unions (CSEU), which bargains on minimum wages and hours for the engineering industry as a whole. The CSEU is composed of executive members of the individual unions, all of them full-time officials; and this is repeated at District level CSEU bargaining to supplement national agreements.

At first glance the CSEU may seem to offer multi-union co-operation. However, the autonomy of the individual unions is guarded closely, and the executive of each union has effective veto powers within the CSEU.

Shop stewards

At site level lay representatives of the union — shop stewards — may bargain on wages and conditions beyond national or district level CSEU agreements, or beyond the national agreements made by the individual unions. The stewards may also deal with issues not taken up at all at the 'higher' levels, eg. the pace of work. Complicated union structures together with frequent changes in work organisation and technology in engineering has meant a long history of shop stewards' organisations, often frowned upon as 'unofficial' as the stewards deal with issues not taken up elsewhere, and often co-operate across union lines in site activities.

LACSSC

Union organisation in Lucas Industries has followed this pattern common to the engineering industry as a whole. In the 1950s the shop stewards on the different sites tried to form a multi-site combine, and while these attempts did not succeed the shop stewards in Lucas Aerospace benefitted from their experiences in these attempts to turn towards building co-operation across the new division of the Company.

The Lucas Aerospace Combine Shop Stewards Committee was formed in 1969 "to co-ordinate and initiate such steps as may be necessary to improve job security, wages and conditions of all Lucas employees". It was a step taken in response to the take-overs and divide-and-rule tactics of the Company which accompanied the rationalisation programme of the 1960s as plants were closed and redundancies announced. Variations in wages and conditions between sites were not new -- they were a product of the complicated bargaining structure in the engineering industry. But by bringing together a number of plants under a single umbrella at the same time as the rationalisation programme provided a common threat, the Company presented a major spur to the development of multi-union, multi-site organisation to meet that threat. There was no union structure in existence to meet that threat with multi-union activity at company level.

Initially the Combine had no formal constitution, and it did not try to negotiate with the Company. The shop stewards exchanged information and co-ordinated activities at the Combine's quarterly meetings and between meetings, in their efforts to achieve parity and protect jobs.

Their activities led to significant victories in wages and conditions, sick pay and pension schemes. Support for the Combine grew with the victories.

The Combine was not able however to prevent redundancies. Between 1970 and 1974 4,000 jobs were lost in Lucas Aerospace, and the workforce declined from 18,000 to 14,000.

It was this failure which provided the starting point of the Plan. If trade union activity -- however militant and well-co-ordinated -- does not succeed -- then don't rely on the traditional ways. If defensive actions reacting to management policies fail -- then go on the offensive.

THE UNFOLDING OF THE PLAN

1. In 1974 the LACSSC formed a Science and Technology Advisory Service to "suggest work and wage patterns which should be negotiated" on issues "relating to skill fragmentation, increased work tempo, job security, dangers of shift working, and possible hazards in the use of new processes and materials". The Company was attempting to introduce new technologies and work organisation. And the Combine was concerned about the nature of work as well as the existence of jobs.

2. The 1974-79 Labour Government proposed nationalisation of parts of the aerospace industry, and 'planning agreements' between Company, Government and Unions where industry remained in private ownership. The Combine met with the Minister for Industry (Tony Benn) in November 1974 to push for the nationalisation of Lucas Aerospace as a necessary basis from which to struggle for job security and better wages and conditions, and for greater democracy within the Company. They were told nationalisation was impossible -- the Company is a multinational. But out of the discussion in the meeting with the Minister the shop stewards began formulating the idea of drawing up alternative proposals for the Company.

3. The Combine prepared an inventory of the skills and equipment available in the Company, from a questionnaire completed by the workers on their workplace.

4. The Combine approached some 180 'experts' in the environment and technology fields asking for help with research on how these resources might be used on alternative products in Lucas Aerospace. Three replied.

5. The Combine realised what they should have done in the first place, and sent a questionnaire round the sites asking the workforce to suggest products which might be produced with these resources. The questionnaire specified the products should contain an "element of social use".

6. 150 product proposals were sent in to the Combine -- none of them for military equipment. The questionnaire and the discussions around it on the sites helped to make the workforce more aware of their own skills and knowledge, brought 'production' and 'staff' workers closer together, and brought into the Combine grades which had not previously been involved. These developments were major factors in the growth and successes of the Combine.

7. Feasibility studies on energy, transport and medical equipment were prepared from the proposals and sent round the sites for discussion -- further cementing interest in the Combine.

8. While all this was going on the shop stewards in the Hemel Hempstead and Marston Green sites presented alternative 'mini-plans' which succeeded in stopping the planned closure of the sites. The Hemel Hempstead mini-plan on industrial ballscrews was described by Lord Beswick (Minister of State, Department of Industry) as "the most impressive piece of work from trade unionists I have seen".

9. The Combine approached trades councils, community groups, and workers and patients in the health service to help identify needs which were not being met but which could be, using the skills and equipment available in Lucas Aerospace.

10. The Combine drew together the findings from all these initiatives and discussed them round the sites.

THE ALTERNATIVE CORPORATE PLAN

" The object of the Plan is two-fold. Firstly to protect our members' right to work by proposing a range of alternative products on which they could become engaged in the event of further cutbacks in the aerospace industry. Secondly to ensure that among the alternative products proposed are a number which would be socially useful to the community at large."

TECHNOLOGIES

A wide range of product proposals are listed in the Plan covering both high and low technologies, and the LACSSC emphasises that high-technology products can have important social uses, such as in telechirics. It is a mistake to think that all high technologies are anti-social.

The Plan includes proposals for intermediate technologies which the Combine suggests may be particularly relevant for 'Third World' countries, for example hybrid guided transport systems. The Combine does not restrict the identification of 'social use' to this country.

The Plan does not suggest that Lucas Aerospace workers should be involved in producing small-scale 'alternative technologies' for individual domestic consumption, since these will be produced in any case if they are profitable and they are sold to individuals who can afford to experiment in 'self-sufficiency'.

'SOCIAL USE'

" The Aerospace Industry is a particularly glaring example of the gap which exists between that which technology could provide and that which it actually does provide to meet the wide range of human problems we see about us. There is something seriously wrong with a society which can produce a level of technology to design and build a Concorde but cannot provide enough simple urban heating systems to protect the old age pensioners who are dying each winter of hypothermia."

The suggestion that products should be oriented to social needs directly challenges the profit criterion and the economic and industrial structures which prevent needs being met. The Plan was far from being an overblown 'suggestions box' simply to prevent the loss of jobs, and the concept of social utility in the Plan encompasses a number of aspects of the whole process of production and consumption, including the relation of product design to social need, the nature of the production process and the utility of the product to the person who requires it.

The Combine did not attempt to give a systematic definition of 'social utility' nor to grade the products proposed on some 'social utility' scale. Rather the Plan provides guidelines of what social utility means, and it is these guidelines which lie behind the specific products in the Plan.

Social Use: Objectives

The Plan suggests that a product, technology or method of work organisation has social value if some of the following criteria are met:

* the conservation of non-renewable resources

* the promotion of health and well-being and the use of non-pollutants

* enhancement of job control, skill and knowledge of the worker

* increasing co-operation between 'manual' and 'intellectual' labour, and encouragement of collective effort and the pooling of skills

* extension of collective bargaining strategies beyond traditional trade unionism

* increased democratic control over production by the workforce, the users and the community

* reduction of the artificial separation between 'producer' and 'consumer', and encouragement of joint planning of the uses of technology

So the idea of 'social use' is not related to products divorced from the context in which they are produced. In the Plan the products proposed are presented in the context of the imperative to build democracy at the workplace and in the community.

USE VALUE AND EXCHANGE VALUE

The Plan counterposes production for use against production for profit. The Combine believed that some of the products proposed would be profitable by conventional commercial criteria, for example the natural gas-fired heat pump, but the Plan points out that the conventional criteria do not necessarily coincide with the interests of the national economy, let alone with outstanding social needs. Many companies pick up millions of pounds in industrial investment grants, rent relief, rate reductions, employment premia, and they do not, on the whole, pay taxes. Weapons manufacturers such as Lucas Aerospace have their profits guaranteed since they are awarded 'cost-plus' contracts by the Government which guarantees a margin of profit on each weapons system produced. As the Combine points out, the British Government ensures that the Company profits from the manufacture of control equipment for the MRCA Tornado, but not for medical equipment.

Waste disposal, the construction of the infrastructure of transport and communications, the costs of supporting unemployed people and of providing medical care to those affected by industrial pollutants are all externalised costs, social costs which are paid by the public and do not appear in Company accounts. The Plan therefore does not take on board the arguments about the profitability of the products proposed, since profitability cannot be related to any rational attempt to direct production towards social needs.

Finding a Market

Having condemned the market as a mechanism for meeting social needs, the Combine realised that they would need to find a market for the products they proposed. In preparing the Plan the shop stewards had approached community groups etc. to help to identify products, as the Plan could make specific suggestions about needs which were not met although preparing a comprehensive list was not possible.

Major sections of the products in the Plan are the result of close co-operation between the Combine and other groups. The Medical Equipment proposals for example are the result of co-operation between the combine and patients and workers in the health service. The Combine believed that the public sector as a whole would be the customer for many of the products in the Plan, representing people's needs, albeit in an indirect way. The Plan suggests that health authorities, public transport operators, housing departments and so on could replace the Ministry of Defence as the major customer of Lucas Aerospace.

EMPLOYEE DEVELOPMENT

> " It is clearly evident at some of the Lucas Aerospace plants that attempts to replace human intelligence by machine intelligence (eg. over-emphasising the importance of numerically-controlled machine tools as against human skill) have had quite disastrous results."

The Combine was concerned not only with what is produced, why it is produced and for whom, but also with how it is produced. Consequently, the Plan includes some radical ideas for new ways of production and control. The Combine proposes organisational arrangements in which the skill & ability of manual and staff workers would be used in closely integrated production teams. In these teams the experience and common sense of the shop-floor workers would be directly linked to the scientific knowledge of the technical staff.

The Combine criticised the Company for failing to extend and develop the considerable skills within the workforce, and for failing to recruit greater numbers of women and young people. The Plan therefore lays out in detail proposals for an Employee Development Programme. The purpose of this is to provide re-training & re-education facilities for the workforce, so that they would be better able to deal with the technological and social challenges confronting them.

The aim of these organisational & educational proposals is to help all members of the workforce to exert real influence over decisions concerning the production process.

A NEW TRADE UNIONISM

" Perhaps the most significant feature of the Corporate Plan is that trade unionists are attempting to transcend the narrow economism which had characterised trade union activity in the past and extend our demands to the extent of questioning the products on which we work and the way in which we work upon them."

The Combine makes it clear that the demand for the right to work on socially useful products is not a 'luxury' which could be dropped in favour of more traditional trade union aims, it is a necessary and integral part of a strategy to secure employment for the workforce in the long term.

The Combine realised that the Plan is a fundamental challenge both to the power and aims of Lucas management and to the economic and ideological assumptions of the whole society. Consequently, while it is essential that other workers develop new strategies for dealing with the powers of their employers, only limited progress can be made while society is based on the assumption that profits come before people. The Plan as a lead to give others the confidence to challenge the increasing waste and misuse of resources and inhumane treatment of people. It suggests that human labour is itself a resource -- not a cost in company accounts.

" It is certainly not the assumption of this Corporate Plan that Lucas Aerospace can be transformed into a trail-blazer to transform this situation in isolation. There can be no islands of responsibility and concern in a sea of irresponsibility and depravity. Our intentions are much more modest, namely to make a small contribution to demonstrating that workers are prepared to press for the right to work on products which actually help to solve human problems."

It is from this perspective that the contribution made by the Lucas Aerospace Combine Shop Stewards Committee is to be assessed.

PRODUCT PROPOSALS

Proposals for some 150 products covering six areas are made in the Plan. A selection is given here.

1. Transport

The proposals centre on public transport, city transport, the "Third World" and safety.

(a) Dynonameter-based braking

Every year there are many serious accidents involving brake failures in large trucks or coaches. Supplementary retarders based on the eddycurrent principle would greatly reduce the risk of such accidents but at present only 10% of Britain's trucks and buses are fitted with them. The expertise in generator manufacture and well-developed marketing arrangements already exist in Lucas Aerospace.

(b) Road-Rail vehicle

This project breaks down conventional concepts of surface travel, to give a vehicle combining the advantages of railways (fatigue-free fast travel for heavy loads and for passengers) with the lower operating costs and greater flexibility of road systems. It has particular relevance for rural areas, where population densities are too low to justify the maintenance both of bus and of rail systems though specific aspects of both are needed. The road-rail vehicle could also form the basis for a truly integrated urban transport system.

(c) Guided transport systems for 'Third World' countries

The basic concept of a road-track transport system or 'hybrid' is very relevant to 'Third World' countries. The proposal is for areas which presently lack any rail track. The system is fairly simple, consisting of a set of parallel concrete tracks and a guide rail. Trucks and their trailers would need only minor modifications to benefit from the guide tracks. 'Truck-trains' would be possible.

The main advantages are that the system allows for much steeper gradients than are possible with rail systems, making construction costs much lower. The overall economics compares favourably with conventional road/vehicle systems. The control systems integrate with many of the control systems now made in Lucas Aerospace.

(d) Hybrid power pack

This pack could be substituted for the existing engines in road vehicles. It utilises a light diesel motor generator and an electric motor or motors. The diesel runs at optimum speed (for torque and power) driving the generator, which feeds two or three conventional batteries and either a single electric motor, or four hub motors. The hybrid power pack makes use of the best characteristics of internal combustion and electric motors.

A prototype has been built and tested. The fuel consumption per 'unit' of car performance is reduced by 50%, and toxic emissions by 80% compared to conventional power packs. Noise pollution is also considerably reduced.

2. Energy Proposals

The proposals are designed to solve the 'energy crisis' without reliance on capital-intensive sources such as nuclear power which have grave environmental dangers, as well as threatening jobs. The Plan suggests ways of improving the conservation of energy, and utilising new energy sources which cannot be exhausted, for example the sun.

The proposals fall into four main categories:

(a) Solar energy input systems

1. Wind power to electricity machines, including the further development of: different wind-blade designs, sail, aerofoil and vertical axis machines; appropriate dynamos, alternators and electric gear; mechanical and aero-dynamic brakes gearing systems, transmission units and clutches.

2. Direct solar energy: utilisation through: flat-plate collectors, using different designs and materials; the direct conversion of solar energy to electricity via photovoltaic cells; steam-raising solar plants; the development of ancillary equipment, including heat pipes and pumps.

3. Utilisation of alternative energy sources such as small water power systems.

(b) Energy storage equipment

1. The improvement of conventional batteries for electric vehicles.

2. fuel cell development.

3. Investigation into mechanical storage systems and hydrogen producing techniques.

4. Further development of electric current rectifiers and invertors.

(c) Energy conversion/Power units

1. Hydrogen fuel cells.

2. Steam rankine cycle external combustion engines. Sterling engines.

3. Extraction of methane from the anaerobic conversion of waste matter.

4. Steam turbines.

5. Thermo-electric production of electricity.

(d) Energy systems

Research into the integration of existing energy conversion units into viable energy utilisation systems, such as:

1. hybrid solar cell/flat plate systems

2. solar cell/electrolysis/fuel cell systems

with applications in, eg. small-scale domestic units for heating, cooling, power and heat pumps.

3. Oceanics

The Plan recognises that the oceans will become a major resource base in the future, and that the development of technologies for exploiting this base could be a source of work for Lucas Aerospace employees. Three activities are identified:

(a) Exploration and extraction of oil and natural gas

A range of automatic and electronically controlled remote equipment for the extraction, processing and shipment of oil on the sea bed.

(b) Collection of mineral bearing nodules

The development of technologies appropriate for the collection of these rich sources of minerals from the sea bed.

(c) Marine agriculture

'Aquaculture' will require a series of purpose-built small vehicles to carry out functions equivalent to traditional agricultural machinery — ground preparation, planting, reaping, etc. Lucas Aerospace is in a very strong position to provide total systems for the vehicles and equipment which will be needed in this area.

4. Telechirics

The Plan proposes research into the development of a range of remote control systems for performing work in dangerous environments, such as undersea, oilrig maintenance, fire-fighting, mining. These systems would not be 'robots', but would 'mimic' the motions of human-beings. This telechiric equipment would make use of new micro-electronic technologies such as are used in robots, but would avoid the labour-displacing and de-skilling effects associated with robotic equipment.

Research into telechirics would use the existing systems and actuator know-how at Lucas Aerospace augmented by specialists from the remote control field.

5. Medical equipment

The LACSSC is very aware that the manufacture of medical equipment is dominated by multinational companies which, in their pursuit of profit, have developed technologies to cure 'acute' ailments to the neglect of preventive medicine and services to the chronically sick and handicapped. The Plan points out that it is the market structure (not the technology itself) which creates the 'need' for evermore sophisticated machinery.

'High technology' as well as more simple devices are proposed in the Plan, as the Combine recognised that some high-technology devices have social use. The range of skills available in Lucas Aerospace could be used to produce a range of medical equipment, including:

(a) Kidney machines

Increased production of machines in Lucas Aerospace, and further development of dialysis technology.

(b) Artificial limb control systems

Development based on existing control-engineering expertise.

(c) Improved life-support systems for ambulances

To improve the survival chances of patients being transported to a hospital.

(d) Sight-substituting aids

The development of aids for the blind, drawing on the experience of blind-landing systems.

(e) Hobcarts

Specially designed 'carts' to improve the mobility of children suffering from spina bifida.

6. Other product proposals

These include a unique power pack which could operate on a range of indigenous fuels and methane and which, by means of a variable speed gearbox, would be capable of alternately pumping water, compressing air, providing high pressure hydraulics and generating electricity. This universal power pack would be particularly useful to small villages or communities in the Third World where it could provide a range of services.

THE PROGRESS OF THE PLAN

Direct negotiations with Lucas Aerospace, working through the 'normal channels' of the trade unions, political lobbying, research and development of products in co-operation with other bodies, and activities to spread the ideas contained in the Plan amongst the labour movement as a whole, have all been pursued by the LACSSC.

The shop stewards have been forced to operate in a context of rising unemployment throughout the engineering industry and Britain as a whole, continued restructuring and planned redundancies in Lucas Aerospace, trade union structures ill-equipped to pursue the objectives of the Plan, and a Labour Government (1974-9) working for agreements between employers and unions to smooth the path of rationalisation and re-organisation, followed by a Conservative Government in May 1979 devoted to using unemployment as an instrument of policy, and to undermining trade union rights as restructuring forges ahead.

In the "sea of irresponsibility and depravity" the Plan has had remarkable successes:

There have been no compulsory redundancies in Lucas Aerospace from January 1976 to the times of writing (May 1982). This when redundancies and closures have forged ahead in other companies.

Dillusionment with the 'old ways' has developed in the labour movement over the years, and the Plan has been received enthusiastically as an approach pointing the way forward. Apart from the Plan itself, the LACSSC has initiated a number of projects to help further the objectives of the Plan, projects unique in the labour movement and which continue to develop.

The complex history since January 1976 and the issues raised cannot be covered adequately in a few pages. This Briefing Paper gives only a sketch of a few key events, and the responses to the Plan and the LACSSC's attempts to further the aims of the Plan.

BARGAINING FOR THE PLAN*

1. In January 1976 the Combine presented some of the proposals in the Plan to Lucas Aerospace, as a basis for negotiations. Management replied in April: it refused to meet the Combine or consider any of the proposals. The Combine could work within the "local consultative machinery" (or to put it another way, in structures set up by management to undermine trade unions, and operate on a site by site basis). Besides — the Company's own product mix was the best guarantee of job security.

Subsequently, the Company had to find another reason for refusing to meet the Combine -- It was "unrepresentative" (this when all 17 sites and 13 unions in Lucas Aerospace sent delegates to Combine meetings). The stewards should go through the "normal channels".

2. The Combine approached the Department of Industry for assistance. A Labour Government committed to the regeneration of British industry, prepared to give financial assistance to companies, and a major customer of Lucas Aerospace was in a strong position to forward the objectives of the Plan.

The third letter of the Combine got a reply (in November 1976):

Gerald Kaufman "understood" that the Plan's proposals were being discussed in the "normal machinery" and the Combine should see Lucas management. (He had been briefed that the Company refused to meet the Combine or consider the proposals.) In February 1977 the Company announced a "labour surplus" of 1,100. In response to political lobbying Les Huckfield (DOI) repeated Kaufman's "understanding" in a letter of 4 April. Under the pressure of more lobbying and publicising of the facts he changed his line and suggested in June that the Combine should go through the 'normal channels' of the CSEU.

3. The Combine approached the Trade Union Congress, asking for advice on how to get the Company to "honour the tripartite agreement between the TUC, CBI and the Government".

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* The Combine's experience with the Company, the Department of Industry and the CSEU are provided a blow-by-blow account in 'Diary of Betrayal', CAITS, 60p. 'The Lucas Plan: A New Trade Unionism in the Making' provides more detail of the Combine's attempts to bargain over the Plan, including the activities on different sites and in individual unions.

The third letter from the Combine got a reply (in November 1976):

" ....The matter was raised by the TUC representative at a recent meeting of the Industrial Strategy Staff Group. Government and employer representatives took the view that Lucas Aerospace did not fall within any of the 39 sectors identified in the industrial strategy...We suggest that you again approach the company on this matter...."

(Our emphasis. Why did the TUC not have an independent view?)

4. The Combine tried to further the Plan through their trade unions — with a mixed response:

(a) The 1977 Delegate Conference of the Transport and General Workers' Union (TGWU) approved a document "Military Spending, Defence Cuts and Alternative Employment" produced by the General Executive Council, which argued:

" the choice usually presented to workers in the arms industry -- between the dole or continued military production is a false one....In the private sector of the defence industry (for example Lucas Aerospace) planning agreements are a matter of urgency. The Government should use its bargaining position as a buyer of defence equipment to insist on planning agreements. These agreements would lay down alternative products for development by these companies."

In 1978 the TGWU demanded alternative production in ordinance factories and naval dockyards in a wage claim for government workers, and the union continues to include 'alternative proposals' in its policies.

(b) In the Amalgamated Union of Engineering Workers (AUEW) attempts to get the Plan's proposals adopted 'above' shop steward level have been 'buried' in vague phrases in composite motions at union conferences.

(c) The national negotiating officers of AUEW (TASS) (Technical and Supervisory Section) tried (unsuccessfully) in June 1976 to introduce parts of the Plan in wage negotiations on behalf of the 4000 TASS members in Lucas Aerospace. And in September 1976 the Deputy General Secretary of TASS wrote the Combine:

" ....The ultimate decision of the Executive Committee was to accept the general concept of the Plan. This is valuable to me, in the sense that I can now feel free to utilise the initiative shown by the shop stewards when I am representing TASS."

In May 1978 Ken Gill, General Secretary of TASS told the Combine:

" Contrary to statements widely circulated the Corporate Plan is not the official policy of TASS."

(d) The 1980 Annual Conference of the Association of Scientific, Technical and Managerial Staff (ASTMS) passed a resolution supporting Lucas and other combine committees fighting redundancies through 'alternative plan' approaches.

5. The Confederation of Shipbuilding and Engineering Unions was not approached at first by the Combine as the shop stewards recognised that the CSEU could not take up their proposals. However, under pressure to go through the 'normal channels' they wrote to the CSEU in June 1977. And again in October...and in December...no reply was received - and this at a time when Lucas Aerospace management was threatening redundancies of "a third of aerospace employees".

March 1978. Lucas Aerospace announces closure of 3 factories (at Liverpool, Conventry and Bradford) and 2000 redundancies.

At a Press Conference on 22 March James Blyth, General Manager of Lucas Aerospace made it clear that the CSEU had been involved with representative of Lucas management and the DOI in discussing the redundancies. The first the LACSSC or any other members of the workforce heard of the plans were from the press.

The CSEU was persuaded to call a special Delegate Conference of Lucas Aerospace workers, which resolved to support industrial action to prevent any run-down of sites or jobs. (April 1978).

June 1978. Deal announced: Closures of the 3 sites to go ahead. L8 million grant from DOI to Lucas Aerospace to build new factories at Huyton and Bradford, with 500 jobs. Presented as a job-saving scheme -- with 1500 redundancies to proceed.

On 29 June 1978 CSEU full-time national officials met with Blyth and reached an agreement: Blyth would keep the status quo on restructuring and rationalisation in Lucas Aerospace pending a study of the problems of the Liverpool and Bradford sites, by a trade union planning group, including members of the LACSSC. In addition:

> Lucas management agrees to provide "all facilities necessary for the trade unions to compile their own alternative proposals for the future of the sites".

A breakthrough? CSEU support for the Plan? Within two weeks of the agreement management tried to remove leading members of the LACSSC from the 'Lucas Aerospace Confed. Committee' formed to implement the agreement. The CSEU acquiesced, and the stewards remained on the 14-man Confed. Committee only because the whole Committee refused to follow this 'lead'.

The Confed. Committee's work, visiting the sites, interviewing workers and managers, researching into Lucas Aerospace as a whole, was hampered by management attempts to get members of the Committee/LACSSC sacked -- for spending time -- unpaid -- on this work, (in accordance with the 29 June agreement).

> June 1979. Confed. Committee send 350-page negotiating document* to Lucas management and the CSEU. The themes and product proposals follow the approaches and suggestions in the LACSSC Plan.

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*(Lucas Aerospace: Turning Industrial Decline into Expansion)

Despite the expectations and the efforts of Lucas Aerospace management and CSEU national officials, the shop stewards of the Confed. Committee had succeeded in preparing a detailed document which more than adequately fulfilled the requirement of the 29 June 1978 Agreement.

On 14 February 1979 the Confed. Committee, CSEU national officials, Lucas management and Kaufman (DOI) met. The Confed's document was ignored, and the Committee outnumbered and by-passed.

St. Valentine's Day Massacre. 14 February 1979

CSEU agree to closure of Liverpool and Bradford sites, with 1000 redundancies,
The new Huyton site to go ahead -- with 800 jobs instead of 500 -- so 'only' 1000 redundancies.
In the event of disagreement: CSEU officials will meet with management.

In March the CSEU Lucas Aerospace Delegate Conference met again, and agreed to accept this agreement only if the Confed. Committee had effective powers to monitor and report back on the Company's activities. The CSEU did not reply to letters from the Delegates on this.

The Agreement of 14 February was called a 'massacre' by the shop stewards because in it the CSEU reneged on the Agreement they had made on 29 June 1978, withdrew their backing of the Confed. Committee formed under this Agreement, and made it impossible for the Plan to be pursued through all the channels the Combine had been struggling in -- the CSEU itself, the Department of Industry, or negotiations with Lucas Aerospace.

At the Press Conference of 22 March 1978 James Blyth had remarked:

"The DOI understands the logic of what we're talking about, because that's the business they're in"

While investigating what had been happening behind the scenes, the Combine found a revealing reference to the LACSSC in a confidential report by the Company:

"....It is clear that national officers of unions and the Department of Industry are aware of the Company's policies and the CSEU is dealing effectively with this unofficial body."

(1977/8 Personnel Report, Lucas Aerospace)

The Combine's experiences in their dealings with the Company, the Government and the national officers led to the shop stewards making a valuable contribution to a critique of the industrial policies of the 1974-79 Labour Government as they really operated.*

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* State Intervention in Industry -- a Workers' Inquiry, 1980, Coventry, Liverpool, Newcastle and North Tyneside Trades Councils, L2.00.

After the massacre

1. The return of a Conservative Government in May 1979 gave a boost to anti-union policies on the part of employers, and this, combined with the effects of the St. Valentine's Day Massacre, meant that Lucas Aerospace eventually succeeded in sacking two the leading members of the Combine, having tried to do so over the previous two-three years. Ernie Scarbrow, Co-ordinator of the Confed. Committee and Secretary of the Combine was forced out in 1980 and Mike Cooley, another leading activist on both committees, was sacked in 1981. Both stewards had a long history of service in their union, and in both cases the efforts by their union to prevent the victimisations were less than convincing.

2. An Alternative Products Group set up in the 14 February Agreement collapsed when the two Confed/LACSSC members withdrew in June 1980. The Group was set up in any case for Lucas Industries, and rapidly pronounced "irrelevant" by James Blyth. The harrassment of shop stewards, and the failure to get any products considered or to get facilities for reporting back to the workforce made it clear that the Group was indeed 'irrelevant' to the stewards.

3. Having got rid of Ernie Scarbrow and Mike Cooley -- both from the Willesden site -- the Company then turned its attention to Shaftmoor Lane, Birmingham, where the most effective controls on the introduction of new technologies were in force. The Company tried to introduce new technology without negotiations, but after a strike was forced to return to the status quo, pending a negotiated agreement. In the course of the dispute however, the divisions between 'production' and 'staff' workers which the Combine struggled to overcome, were brought to the fore, with Company encouragement. The site's TASS secretary, Brian Salisbury, was voted out of this position in the moves to divide-and-rule. Brian was also the Secretary of the Combine, but could not continue to serve on the Combine after he lost his position as a site representative.

4. The Company then turned to the Burnley site, announcing 1000 redundancies in February 1982. To date 600 voluntary redundancies have taken place.

BEYOND BARGAINING FOR THE PLAN

The Combine has been weakened by the concerted attacks and the inability of the unions at top levels to respond positively to the shop stewards' initiative. The story is not however one of failure -- it is of remarkable success in the light of all the forces ranged against them. Although to date the Combine has not been able to get the Company to implement the proposals in the Plan, it has resisted successfully major redundancies for several years, as the Plan formed a focus round which to organise and mobilise the workforce. It will continue to remain a central element in trade union activity in Lucas Aerospace while the Company threatens redundancies and relies on its traditional product range.

" ....there can be no islands of responsibility and concern in a sea of depravity...."

1. Other Workers' Plans

The Plan has proved to be an inspiration to other groups of trade unionists facing comparable problems of rationalisation and redundancies:

(2) In another defence contractor, Vickers, the National Shop Stewards Committee started a campaign for the conversion of production from defence to non-military equipment, following threats of redundancies arising out of the cancellation of some defence contracts. Together with some researchers they drew up a range of alternative product proposals based on Vickers' expertise in the field of sea-based technologies.

(b) Stewards from a number of companies — C.A. Parsons, GEC, Clarke Chapmans & Babock & Wilcox — in the Power Engineering Industry, formed a Joint Trade Union Committee to co-ordinate a campaign against the run-down of the industry. They also produced detailed proposals for alternative production including Combined Heat & Power (CHP) systems.

(c) Following major redundancies in the motor industry a Workers' Enquiry was set up which included stewards from almost all the major companies — Chrysler, Ford, Vauxhall, Austin Morris, Triumph, Rover, Jaguar, Alvis, Automotive Products, Wilmot Breedon, Masey Ferguson. A Report was published after the enquiry which contained details for using the motor industry's resources & personnel for producing socially relevant transport.

(d) Many other groups of workers have instigated alternative plan initiatives often as a result of co-operation with the Lucas Combine or CAITS. These include workers from: Dunlops, Metal Box, Thorn, Scotch-Whisky, GEC-Avery, Tress and even abroad, such as in SAAB, Sweden.

2. Product Development

Some of the products proposed in the Plan are being produced outside Lucas Aerospace. The hobcart for example (proposal 5e) is produced at a Borstal. (The Australian Spina Bifida Association sent an order to the Company for 1000 hobcarts when they heard of this proposal).

The point about the products proposed however was not simply that they have 'social use' but also that they should be alternatives to redundancies, and that the workforce should exercise greater control over the production process. That is why we do not try here to list what has happened to all the proposals — it is relevant only within that context, the context of the Plan.

(a) The work force at the Burnley site of Lucas Aerospace worked with the Energy Resources Group of the Open University on the heat pump proposal (2a2), and persuaded the Company to develop the heat pump prototype at the factory, in co-operation with the ERG. The shop stewards also designed a factory for production of the heat pump, including consideration of the labour process — from the workers' point of view -- in the design.

(b) Sheffield Polytechnic are developing a dehumidifier for use on council estates, which will then be produced by a co-operative funded by Sheffield City Council. The dehumidifier is an adaptation of the heat pump, and the project was set up following discussions by the Polytechnic and the Council with members of the Lucas Combine.

(c) The road-rail vehicle* (proposal 1b) has been developed at CAITS from prototype to final testing, and there is currently a contract between NELP (North East London Polytechnic) and the National Coal Board to adapt the concept for safer and more economical underground transport. The project began with an old bus, which was converted with the involvement of Lucas Aerospace workers on a number of sites making spare parts and building the guided transport system needed.

(d) A number of products being considered for development at the Unit for the Development of Alternative Products (UDAP) which opened in January 1982.

3. Shop Stewards — and Academics

The Combine began in 1975 to seek assistance with research into the products they proposed, and it was from this that the projects mentioned above grew. They involved relations unique in the trade union movement:

(a) CAITS (Centre for Alternative Industrial and Technological Systems) began in January 1978 as a Centre run jointly by the Combine and NELP. The Centre's objective is to further the aims of the Plan, and besides the work on the road-rail vehicle,
hosted the Confed. Committee for the final two weeks' preparation of the negotiating document. The Centre works with LACSSC and other combine committees in researching into their companies, and also publicises the Plan both in this country and abroad.

(b) UDAP is a venture run jointly by the LACSSC and Coventry (Lanchester) Polytechnic. Some 20 students are working on product development in the Unit since it opened in January 1982 -- and these projects include some of the proposals in the Plan.

(c) In UMIST (University of Manchester Institute of Science and Technology) work on human-centred systems (proposal 4) has been reinforced by the Combine's initiative.

4. The Campaign Continues

" The work of the Lucas Aerospace workers....has become the model for the machinists' (IAM-AW) own Rebuilding American program.
It is a blueprint for integrating re-industrialisation with technology and democratic values. When the crash comes there is little doubt that it is in the direction of the Lucas Corporate Plan that US policy-makers will have to look...."

(William Winpinsinger, International President, International Association of Machinists and Aerospace Workers, IAM-AW)

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* Road-Rail Vehicle Information Pack, CAITS, L1.25, gives details of this project.

The relevance of the Plan to other workers in many countries has been amply demonstrated by the enthusiasm with which it has been received. In the UK shop stewards committees in a number of industries have similarly attempted to develop stronger forms of multi-union, multi-site union organization and have challenged corporate policies over rationalisation, investment, and product choice.

The LACSSC has worked to encourage these initiatives and to build links between shop stewards combine committees in different companies. In 1980 the Joint Forum of Combine Committees was formed to enable these committees to exchange experiences and develop strategies to face the increasing power of centralised corporate management.

In 1981, the Joint Forum, along with a number of Trades Councils, produced a Declaration on industrial policy entitled Popular Planning for Social Need in order to widen and deepen discussion on the present 'Alternative Economic Strategy' put forward by the TUC/Labour Party Liaison Committee. Drawing on the experience of groups of trade unionists, including the Lucas Combine, under the last Labour Government, the Declaration suggests that alternative strategies, to be effective, must come from 'below', and have the full involvement of workers on the shop-floor and in the community.

The Plan, based as it is on directing production towards social needs instead of profit, clearly has enormous importance for those groups who are concerned with industrial, social and economic planning. The Plan made an enormous contribution to protecting jobs in Lucas Aerospace, but perhaps more importantly the shop stewards in the Lucas Aerospace Combine Shop Stewards Committee showed in practical terms that groups of workers are more than capable of deciding what should be produced, how it should be produced, and for whom it should be produced. The implications of this cannot be under-estimated.

Centre for Alternative Industrial & Technological Systems, North East London Polytechnic, Longbridge Road, Dagenham, Essex.

May 1982.

V. PLANT CLOSINGS AND CONVERSION

The Pang of Plant Closings: Hunting Ways to Relieve It
- Robert Nelson

Economic Conversion: What Should Be the Government's Role?
- Congressional Budget Office

Shutdown: A Guide for Communities Facing Plant Closings; (Chapters II and III)
- Northeast-Midwest Institute

Why Plant Closing Legislation is Necessary
- Sheldon Friedman

Economic Dislocation: Plant Closings, Plant Relocations and Plant Conversion; (Chapter II - "Sweden")
- Labor Union Study Tour

Direct military violence is used to reinforce structural, economic violence. Peace cannot be achieved if only direct violence is overcome because economic exploitation will recreate violence. Peace, therefore, cannot mean just the absence of military violence, but must be the elimination of both direct and structural violence.

– *Christopher Pinney*

Former Chair International
Coalition for Development Action,
Brussels, Belgium

In many industrialized countries the results of misplaced investment in armament production is the proliferation of industrial plant closings.

Two of the articles, "The Pang of Plant Closings: Hunting Ways to Relieve It" by the Northeast Midwest Institute, and "Shutdown: A Guide for Communities Facing Plant Closings" by Robert Nelson, describe alternatives that communities have developed to closing plants. The two remaining selections, "Economic Conversion: What Should Be the Government's Role? by the Congressional Budget Office and "Why Plant Closing Legislation is Necessary" by Sheldon Friedman, describe what the U.S. Government's role might be in the process of economic conversion.

Finally, Chapter II in "Economic Dislocation: Plant Closings, Plant Relocations and Plant Conversion" by the Labor Union Study Tour, describes the experience of Sweden in adjusting to economic dislocation and change and the government's role in minimizing the negative impact on workers and communities through an emphasis on alternative employment and retraining.

THE PANG OF PLANT CLOSINGS: HUNTING WAYS TO RELIEVE IT

"The Pang of Plant Closings: Hunting Ways to Relieve It," Robert Nelson. The Christian Science Monitor, July 12, 1982, p. 11.

When United States Steel Corporation shut down its Birmingham, Ala, plant two weeks ago, Robert Douglass of the city's chamber of commerce stated the obvious: "We're certainly not pleased with the closing." He expects the city to lose $60 million annually in wages and purchases, as well as millions more in service-related industries.

With the nation in deep recession, plant shutdowns and the devastating effects they have on the areas around them have become more common. They have prompted Congress and state legislatures to consider laws limiting the damage or at least delaying it.

The Department of Labor estimates that of the unemployed, 25 percent — some 1.5 million people -- lost their jobs because of plant closings last year. According to Dr. Lou Ferman, director of the Institute of Labor and International Relations at the University of Michigan, 1 out of every 4 workers subject to a plant closing never returns to work. And 10 years ago, Dr. Ferman says, only 1 in 25 did not get a job later.

At present very few states have any kind of legal restraints on the closing of a plant. In the past two years, however, 68 bills attempting to place closing restrictions on companies have been introduced in 24 legislatures. Moreover, Congress is considering legislation that would require all companies to give employees two year's prior notice of a plant closing.

Experts, though, figure such legislation has little chance of passage. The key objection of the business community to pre-notification is the expense. First, a plant that is losing money might have to be kept in operation for two years. Second, it might prompt union demands for severance pay and retraining programs.

In a report given to the Congress and key Reagan Administration officials, Richard B. McKenzie, a senior fellow of the Heritage Foundation, a conservative "think tank", argues that limits on plant closings also damage the economy over the long run through inefficiency. Companies close plants in one area to move into areas with lower production costs. They fear that if they do not move, their competitors — which have taken advantage of the lower production cost areas — can offer buyers the same products at a lower price.

More liberal critics argue that while more workers are being laid off because of shutdowns — and facing tougher economic times than in previous years — few corporations are responding to the problem responsibly. In 1980, the president of the United Automobile Workers, Douglas Fraser, described plant closings as the most serious social problem of the next decade, and he stressed that "employers just can't pack up and abandon a plant without regard to the workers and to the community in which that plant is located."

Dr. Gary Hanson, head of the business and economic development division at Utah State University, says the effects of a shutdown tend to stun local communities. "The ability of the community to respond is impaired," says Dr. Hanson, who coordinated a study of plant closings for the Department of Labor. Large industrial plants often supply a substantial proportion of property taxes in a community. When they close, the weight of that taxation falls on householders. Often it leads to fiscal cutbacks. Schools are one of the hardest-hit areas, he says.

Plant closings also drag down real estate markets, forcing property values to plunge and reducing purchasing power. "Often people can't even pay their rent or a mortgage," Dr. Hanson notes. Sometimes an opportunity exists to prevent a plant closing. "If (the community) had enough time to put together an alternative to closing, they might save the plant," he says. But he feels that all too often corporations "turn a blinded eye on the workers and cut them off at the knees."

Growing concern over the effects of plant closings led the Northeast-Midwestern Congressional Coalition last year to study alternative solutions. Virginia Mayer, an author of the study, describes it as an attempt to provide "a guidebook, not a rule book, presenting strategies for this type of crisis." The study suggests:

* The community should look for indicators of a plant's closing before it happens. These might include a declining market for its products, worker layoffs, or weaknesses in management. Then it should seek alternatives to closing before it occurs.

* New ownership plans can be considered, especially the possibility of employee ownership.

Some 5,000 businesses are now operated under employee stock ownership plans in the United States. In April, for instance, the employees of General Motors Corporation plant in New Jersey purchased the plant for $53 million when faced with the threat of a closing. According to one report, productivity is up 80 percent and the number of defective manufactured products has dropped from 10 to 7 percent.

* Economic recovery strategies can be created, using both public and private-sector resources.

* Plants can be reconditioned for alternative operations. A plant can be retooled and the workers retrained to work on those tools.

There have already been a number of successful plant transformations. In Akron, Ohio, for example, Quaker Oats converted two cereal silos into a 260-room hotel and shopping plaza. International Silver transformed a Connecticut plant from producing silverware to casting precision tools.

Advancing technology, as well as recession, can be the cause of plant closings, notes Lou Ferman at the University of Michigan. By reindustrializing, resources are being invested to create new industries, but this means displacing the older ones. New technologies require less space and fewer workers. "It's not just another recession," Dr. Ferman says: "it's a technological revolution — a total reformation of the technological base." One result, he warns, will be more plant closings and a greater need to deal with them responsibly.

ECONOMIC CONVERSION: WHAT SHOULD BE THE GOVERNMENT'S ROLE ?

"Economic Conversion: What Should Be the Government's Role?," (Preface and Chapter I), Congressional Budget Office, Washington, DC, January 1980.

PREFACE

Members of the Congress have taken great interest in how labor and capital move to new and more productive pursuits in response to sudden declines in the demand for their services--for example, when a military base closes or when imports undercut a domestic industry. Many observers term this movement of resources "economic conversion."

To examine the government's role in assisting economic conversion, the Congressional Budget Office (CBO) organized a working conference at the request of Senator Edmund S. Muskie, Chairman of the Senate Committee on the Budget, and Senator Alan Cranston, at the time a member of the Budget Committee. The conference was held in Washington in July 1978, with representatives of labor, business, and government invited to present their views. Drawing on their experience, the participants discussed the possible role of government in providing adjustment assistance, the efficacy of current programs, and what changes might be appropriate. Special thanks are due to the participants for contributing to this review of the economic conversion problem.

Although the conference was held more than a year ago, the issues raised still bear on Congressional consideration of the conversion problems. This Special Study is organized in two parts. Part I, a summary of conference proceedings, presents synopses of the conference participants' remarks. Part II is a draft paper prepared by CBO staff members to provide a basis for discussion at the conference. The synopses and background material were prepared under the supervision of David S.C. Chu, drawing on contributions by Jane D'Arista, Everett M. Ehrlich, Virginia G. France, Richard A. Hobbie, H. Marshall Hoyler, Rosemary E. Minyard, and Carl R. Neu, of CBO. Johanna Zacharias edited the paper with the assistance of Mary A. Anders, and Nancy H. Brooks prepared it for publication. In keeping with CBO's mandate to provide objective analysis, this paper offers no recommendations.

Alice M. Rivlin
Director

January 1980

PART I. REPORT ON THE CONFERENCE

The first portion of this CBO Special Study contains a summary of the remarks given at the conference on economic conversion held on July 18, 1978. Senator Alan Cranston chaired the conference, and the eight prticipants, listed here in the order in which they spoke, were:

Frederick W. Garry
Chairman and Chief Executive
Rohr Industries

Eugene I. Casraiss, Jr.
Legislative Representative
International Union United Automobile, Aerospace and Agricultural Implement Workers of America

Lester C. Thurow
Professor of Economics
Massachusetts Institute of Technology

David S.C. Chu
Assistant Director
National Security and International Affairs Congressional Budget Office

T.A. Wilson
Chairman and Chief Executive
Boeing Aircraft Corporation

Rudolph A. Oswald
Director of Research
American Federation of Labor-Congress of Industrial Organizations

Con Howe
Executive Director
Massachusetts Government Land Bank

Jerry Jasinowski
Assistant Secretary for Policy
United States Department of Commerce

SUMMARY

Dislocation is a fact of economic life. In response to dislocation, resources—labor and capital—ought to move to more productive pursuits. This movement is the process called "economic conversion". The conference, held by CBO in July, 1978, focused on three aspects of the economic conversion problem:

What should the role of government be in assisting economic conversion?

How well do the current programs work?

What changes in government policies should be considered?

Each of the conference participants addressed these questions from the perspective of his professional experience. Mr. Garry and Mr. Wilson used the recent history of their companies to illuminate how government might better assist in the conversion problem. Both highlighted the difficulties that occur when there are sudden, sharp shifts in the demand for a company's products. To the extent that such shifts reflect the vagaries of government policy (as they did for several years in the mass transit area, for example), more consistent policies--with changes made gradually rather than suddenly--would assist the business community in achieving smooth transition. Mr. Wilson suggested that, when major economic contractions do occur, particular attention be paid to those workers with long-time ties to the communities they live in—perhaps by providing a stronger link between length of employment and the extent of employment benefits.

Both Mr. Casraiss and Mr. Oswald advocated a general and more organized economic conversion program than Mr. Garry or Mr. Wilson seemed to favor. They stressed the importance of labor participation in planning for change, citing "prenotification" (advance warning) as an essential ingredient in economic conversion. Both Mr. Casraiss and Mr. Oswald felt that the current ad hoc assortment of programs was inadequate, and that the United States could benefit from the European experience in designing new programs. Both urged that unemployment benefits be improved, that more pensions be made portable from job to job, and that transitional health insurance be provided to cover displaced workers while they seek employment.

Mr. Thurow also supported integrating the separate program that now exist into a general program--a comprehensive "safety net" under workers who are laid off-although he questioned the applicability of European experience with conversion aid to the United States. He stressed that the importance of this safety net would fluctuate with the business cycle, assuming greater significance during periods of high unemployment. Mr. Chu noted that, provided labor and capital markets worked reasonably well, a comprehensive safety net might actually retard circumstances, by sharply reducing the incentive for workers and entrepreneurs to seek new activities. Mr. Thurow argued, however, that imperfections in the marketplace—especially the marketplace for labor--are significant and that other government programs (for example, environmental protection regulations) require the counterbalance of conversion assistance to help markets adjust promptly.

Mr. Howe focused on the problems that state and local officials must solve when their communities confront sudden changes in the economic outlook. He stressed that local governments cannot move away from the problems the way workers can—Massachusetts cannot move to the Sunbelt. Mr. Howe emphasized that the conversion process was best managed by state and local governments. He felt that there was a need for a bridge between federal assistance and local officials, to be provided perhaps by the state itself or by state institutions.

Mr. Jasinowski offered a series of criteria for deciding whether federal assistance was warranted. He expressed sensitivity to the role of the marketplace as the normal vehicle for adjustment, and he cautioned that conversion programs ought not be used to address problems caused by cyclical fluctuations in the economy. Nor did he advocate the use of conversion assistance to counteract long-term economic decline in an area; that problem, he argued, is better handled by economic development programs. In general, Mr. Jasinowski urged a middle course between a general safety net and current ad hoc approaches in designing future programs to assist in economic conversions.

CHAPTER 1. WHAT IS "ECONOMIC CONVERSION"?

Dislocation is a constant feature of economic life. Workers, firms, and communities are subject to a variety of hazards beyond their control that can endanger jobs, sales, or economic viability. The elements of risk include weather, government actions, foreign competition, and changes in tastes or technology. In response to such dislocations, resources must try to shift to other, more productive pursuits in a process termed "economic conversion".

Dislocation is often the result of government action. Even when the overall effect of a governmental action is beneficial to the economy, there can be adverse effects on particular groups or communities . Lowering a tariff--or failing to raise one--can benefit consumers of the product in question but can injure the firm or workers in the domestic production industry. Closing an unneeded real military base or phasing out an obsolete or ineffective weapons system can save federal money in the long run; but in the short run it will increase local unemployment. Similarly, regulations designed to avoid damage to the environment or to conserve energy can also have adverse economic effects on individuals, firms, or communities.

Often, the relatively small group injured by the dislocation can arouse enough sympathy or muster enough political clout to block an action that would benefit much larger groups of people. In principle, the large group that stands to gain can well afford to compensate the smaller group that loses; but in practice, there may be no mechanism by which the compensation can be carried out. If governmental aid for economic conversion were available to mitigate the harm done to injured groups, decisionmakers might find it easier to press for the general benefit over the particular interest. There might be less tendency to argue the employment effects of defense spending, to protect inefficient industries, or to weaken needed environmental regulations.

Some economic conversion programs exist now. The Trade Act of 1974 (Public Law 93-618), for example, provides adjustment assistance for workers, firms, and communities that are adversely affected by increased imports. The Department of Defense offers some help to mitigate the hardships caused by the base closings and other cutbacks in military installations. In other cases--for example, the termination of a major weapons contract--there is little or no federal assistance available other than general programs such as unemployment compensation.

SYNOPSIS OF REMARKS BY THE CONFERENCE PARTICIPANTS

Frederick W. Garry

Mr. Garry used Rohr Industries recent experience in the transportion field as a basis for examining the economic conversion issue and the potential role of government assistance in ameliorating that problem.

Rohr entered the public transportation field in the late 1960s and early 1970s, when the federal government was encouraging the industry to expand. A number of companies stepped forward in anticipation of government funding. There were plans at that time to buy large numbers of buses; AMTRAK was to buy new rolling stock; and there was discussion of significant expansion in the nations's metropolitan rail transport system.

Responding to these governmental signs of interest to the private sector, Rohr geared up to enter the bus and rail car markets and began substantial research on future mass transit possibilities. Unfortunately, little of the anticipated government demand materialized. Moreover, some of the government demand that did materialize (for example, for buses to accomomdate handicapped riders) was subject to frequent changes in design specifications. As a result, Rohr--like other companies in the industry--lost substantial amounts of money. Adjusting to the change in anticipated demand was difficult; many of the workers had specialized skills and hence were hard to absorb elsewhere in the company.

Mr. Garry did not attempt to blame changes in federal policy for all Rohr's problems. Nor did he suggest that there were easy answers to the difficulties created by design changes in industries using new technology. But he emphasized that consistent government policies, with changes made gradually rather than suddenly, would enable the business community to anticipate and provide for future requirements rather than react hastily to surprise decisions. With such better planning, Mr. Garry asserted, it might be possible to limit the need for explicit adjustment assistance programs.

T.A. WILSON

Mr. Wilson focused on the Boeing experience as an illustration of the complexities in providing adjustment assistance.

In the late 1960s, Boeing was expanding rapidly. The company had accelerated production of 707s and 727s to meet an air traffic growth rate of 15 percent per year. At the same time, it was also producing the Short Range Attack Missile and Minuteman Intercontinental Ballistic Missiles. And in December of 1966, Boeing had been awarded the Supersonic transport (SST) prototype contract. To meet these commitments, the company increased its labor force from just under 50,000 in 1965 to just over 100,000 in 1968. With so hasty a buildup of personnel, labor productivity deteriorated.

Market conditions then changed very suddenly. In 1970, the commercial aircraft market dried up. In March 1971, the SST prototype was cancelled. Although foreign sales and military contracts acted somewhat as stabilizing influences, Boeing was compelled to cut its payroll sharply.

As is true in any company, Boeing had had large numbers of voluntary terminations in the 1960s ranging from one-eighth to one-third of its labor force per year. But the large cuts that Boeing needed to make in 1971—to return to a labor force smaller than the company and in 1965--required substantial numbers of layoffs. Moreover, as it became clear to Boeing workers that new jobs would be hard to find in an increasingly tight local job market, the number of voluntary terminations fell sharply. Workers preferred to be laid off, since an array of benefit programs favored employees who were laid off over those who gave up their jobs voluntarily.

In contrast to the voluntary terminations of the 1960s, concentrated among the employees who had been with Boeing only a short time, many of the involuntary terminations in the early 1970s involved employees who had been with the company for several years. Most of these people had strong ties to the community, remained in the Seattle area, and were eventually rehired by Boeing. Nonetheless, they suffered significant income losses and psychic costs.

What Boeing learned from this experience is never again to try to expand production as rapidly as the company attempted to do in the late 1960s. Labor productivity can fall sharply under these circumstances. Moreover, if the eventual price of rapid expansion is rapid contraction, the "normal" process for reducing the labor force--by attrition--can no longer be counted on.

The Boeing experience suggests that modest contractions can be handled by the normal workings of the labor market. But when a company is forced to make large cutbacks, involving layoffs that cannot be absorbed easily by the local labor market, adjustment assistance may be appropriate, especially if the workers who are laid off have long employment histories with the enterprise. This might suggest strengthening the relationship between the extent of employment benefits and duration of employment.

In the discussion of Mr. Wilson's remarks, the issue was raised whether government purchases--especially military purchases--are a source of instability. Although he acknowledges the counterexample of the B-1 bomber, Mr. Wilson argued that military demand is, in fact, relatively stable. Moreover, a high proportion of military contract work is done by large companies that can absorb cancellations. Government ownership of plants and equipment would not, in his view, be a useful way to help the conversion problem. In fact, he suggested, there is a stronger incentive for a company to work for effective conversion when it owns the plants and equipment than when the government is the owner.

EUGENE. I. CASRAISS

Citing the plight of the worker injured by dislocation described in the CBO background material, Mr. Casraiss argued that job insecurity is at the heart of the issue. To deal with the problem, the United Auto Workers (UAW) stresses prenotification--advance notice alternative uses of the capital stock. The Environmental Protection Act was cited as a model, providing for notice years in advance. Labor sees this as an opportunity to explore problems before layoffs become necessary and thus obviate or at least minimize them. Decisions involving layoffs should not be strictly a management prerogative.

Mr. Casraiss criticized the present trade adjustment assistance program as inadequate. The program raises hopes that are not fulfilled, he asserted, and is subject to unwarranted delays. Moreover, the program excludes those workers employed by supplies and subcontractors who, in many cases, are producing the same part as the prime contractor.

Mr. Casraiss was also critical of proposals for Unemployment Insurance reform that did not improve the equity of benefits. A national system that resulted in higher benefits in some states and lower ones elsewhere would constitute income transfers from one group of the poor to another. Reform proposals should seek to raise unemployment compensation to livable levels for all. In Mr. Casraiss' view, such provisions as short-workweek benefits, job-search allowances, and relocation provisions should be recognized as essential. Computerized employment services should maintain lists of job vacancies for every city and town in the nation. Meaningful reform of federal unemployment compensation system should include continued medical insurance payments and continued employers' Social Security contributions for laid-off employees.

Mr. Casraiss offered several specific suggestions for future programs. He urged the establishment of a three-part commission representing industry, labor, and government to study economic dislocation and to recommend conversion programs, with the Congress setting objectives for the commission. As a general principle, the need for labor involvement in discussion of dislocation should be recognized.

Mr. Casraiss argued that the Trade Act of 1974 (Public Law 93-618), the Redwoods Act of 1978 (Public Law 95-250), authority for AMTRAK, and similar legislation set precedents for the federal government's assuming at least partial responsibility for dislocations caused by its actions. Given these particular decisions, Mr. Casraiss indicated, it is reasonable to extend assistance to all Americans who are dislocated as a result of government action.

In formulating future assistance programs, the United States may be able to benefit from the experience of other countries, Mr. Casraiss noted. The UAW has studied economic conversion programs in Sweden, Germany, and other European countries and has prepared a report on the subject.[2]

Finally, Mr. Casraiss indicated his strong disagreement with the statement by Mr. Garry that, with better planning, it might be possible to limit the need for explicit adjustment assistance programs. Insofar as planning prevents dislocation, planning would limit the use of adjustment assistance programs, he argued, but in no way would it diminish the need for such programs to exist.

He also suggested that the federal government be authorized to buy plants, acquire shares in companies, and offer guidance to management, with the understanding that private ownership could be reestablished over time at the government's option. The purpose of federal involvement would be to assist in transition toward alternative uses of existing facilities. The government should also take responsibility for inserting provisions in defense contracts to ensure protection for defense workers and the communities they live in. As an example, Mr. Casraiss suggested that the government could require defense contractors to offer portable pension plans.

RUDOLPH A. OSWALD

Mr. Oswald argued that the United States is far behind other developed countries in accepting responsibility for economic change. Almost all European countries require that workers be notified in advance of major employment reductions. In contrast, in the United States, even when corporation managers know that contracts are running out, there is no requirement that workers be notified of pending layoffs.

Retirement of defense workers represents a special problem. Although defense contracts and subcontracts often shift from one employer to another, the same workers are generally involved. Few defense contractors, however, have portable pension plans. When a defense worker changes companies, therefore, he is likely to lose his pension rights. To remedy this situation, Mr. Oswald suggested pooling the pension plans of defense contractors; he further proposed that government take specific responsibility in this area.

In European countries, social security laws and benefits encourage shifts to early retirement as a tool in assisting economic conversion. U.S. law, however, is inflexible and tends to discourage workers' acceptance of early retirement. Greater flexibility might help older workers deal with economic dislocation.

Because health insurance is usually an employment benefit, an additional effect of economic dislocation is less health care for jobless workers and their families. In the absence of national health insurance, Mr. Oswald proposed that the government maintain coverage for dislocated workers, citing European countries that have assumed more responsibility in the area. Improved unemployment insurance system would better cushion the impact of job loss generally, as well as the specific losses associated wih economic conversion.

Mr. Oswald cited the Armour case in the early 1960s as a successful experience in economic conversion.[3] Armour's success was the result of considerable planning, made possible by advance notice, the involvement of business, labor, and government, and the use of such tools as retraining and early retirement.

Economic conversion, in Mr. Oswald's view, is a government responsibility, and the European experience affirms that the approach can work. The United States has accepted its responsibility only in part, and its experience to date has been marred by frequent delays. He criticized existing trade adjustment assistance programs as slow to resolve the issues. Thus, workers and specific industries bear too much of the burden of adjusting to changes in trade relations. These is a need for negotiation of fairer trading relationships, for countervailing duties, and for recognition of the effects of sudden shifts in trade.

In a discussion of Mr. Casraiss' and Mr. Oswald's remarks, Mr. Jasinowski agreed that prenotification is an attractive proposal, but he foresaw difficulties in establishing a level of projected layoffs that would trigger prenotification. Moreover, given the constant labor turnover in industry, it is not easy to know how government should intervene. Finally, for firms known to be in trouble, prenotification might only compound their problems by undermining their status in the credit markets.

Mr. Thurow noted that the European system was not really tested until the 1974 recession. Moreover, there is a class of workers—migrants from poorer countries--that receives only limited benefits from the host governments of the countries they work in, and limits on benefits given these workers strengthens the position of indigenous labor. This is also true in Japan, where, although all workers are indigenous, there are large numbers of temporary workers, and only around 60 percent of the labor force has "conversion rights." Moreover, when recession occurs, female employees in Japan are encouraged to drop out of the labor force.

Mr. Oswald replied that Germany does indeed provide advance notice to migrant workers and sends them home only at the end of contracts. Mr. Thurow stated that, while migrant workers are under contract, temporary workers are not; they can be fired overnight. He indicated that many European employers, fearing another recession, are now hiring temporary employees only.

LESTER C. THUROW

Mr. Thurow suggested that the importance of conversion programs might change over the course of the business cycle. In a prosperous economy, a high rate of voluntary terminations makes economic contraction easier; whereas, in a recession, a high unemployment rate inevitably lowers the rate of voluntary terminations and makes adjustment more difficult.

Mr. Thurow supported integration of the current separate conversion programs into one general program. The evidence indicates that a worker who loses his job during a base closing or during a time of massive layoffs by a firm is hurt in much the same way as a worker laid off for any other reason. The design of current unemployment programs is complicated by a host of other factors related to how dislocation can hurt a worker--regional complexities, the state of the economy, the age and other characteristics of the worker, and his previous employment experience. Because of these factors, Mr. Thurow supported a general safety-net approach, rather than one based on casual criteria.

Mr. Thurow offered several arguments against the laissez-faire approach. He noted that the market cannot be expected to adjust when the government changes the rules of the game, as in the urban transportation case cited by Mr. Garry or in the case of new environmental regulations. Major changes in the economy likewise cause problems for the marketplace. Mr. Thurow pointed out that Adam Smith's "invisible hand" is all thumbs in the labor market: a worker cannot always get a job by lowering his wage demands.

Mr. Thurow discounted the possibility of relying on planning without also having the income--support programs, and he questioned whether an income-support program could be designed to separate transient workers from those with strong ties to a particlar area. Mr. Thurow indicated that he favored the concept of planning but noted that there are always random errors and shocks that cannot be anticipated. The government must become involved when it is the employer, when it changes its mind about what it wants to buy or alters its policies in other ways. The government must also become involved when the private sector sustains shocks to which private employers cannot readily adjust. When government is the direct cause of dislocation, the degree of government involvment should be greater. In planning conversion projects, particular care should be taken to avoid discouraging innovative responses to the underlying problem.

Mr. Thurow noted that in environmental cases compensation may have a role in preventing projects (such as power plants) from becoming hopelessly delayed. Compensating parties or groups who are blocking an action could result in substantial savings in interest payments and could avoid the increased construction costs that result from postponements.

In the discussion of Mr. Thurow's remarks, Mr. Jasinowski questioned the practicality of a general safety-net program. He not only doubted that such a net could be designed; he also pointed out that there was political support for differentiating by cause of impact. Mr. Thurow replied that he was providing an economic argument for a general program, while Mr. Jasinowski was offering a political argument for a differentiated approach. Mr. Jasinowski suggested that a mixture of economic and political criteria was the best guide in deciding policy.

DAVID S.C. CHU

If markets work fairly well, Mr. Chu argued, government intervention requires a strong justification.[4] He distinguished among several cases for government intervention even when markets do work well, however:

* When the government itself creates instability. In such instances, the issue is whether such instability has been anticipated by the market. Are wages higher in industries that must cope with government-caused instability? Results of a recent paper by James Smith and Finis Welch suggest that the workers involved are already being reimbursed for the instabilities they risk.[5]

* When the government must overcome definite obstacles to change. Job searches may involve unusual expenses. Or workers may want to move, but they may be reluctant to absorb losses of equity in their homes because of a depressed local housing market.

* When political factors are involved. Even though a group may have been compensated for a dislocation by market mechanisms, the group may seek additional compensation through the political process if it has the leverage to obstruct change and the incentive to use that leverage.

Mr. Chu noted that one of the problems with conversion programs or other safety-net schemes is that they may act as disincentives to seeking new jobs quickly, especially if doing so involves relocation. Long-term employment insurance may have this effect, as it is allefed to have had in the case of the Detroit auto workers during the 1974-1975 recession.

Mr. Chu suggested that the conversion problem appears less severe when viewed in the context of the economy as a whole than it does in particular industrial or local situations. Losses resulting from government action represent only a small percent of the Gross National Product (GNP) and therefore a relatively small number of workers. This should be contrasted with the 25 to 30 percent voluntary quit rate in the manufacturing work force during nonrecession years. Conversion assistance mechanisms might slow natural labor turnover in a manner that is detrimental to all.

In support of this point, Mr. Chu noted that only 1 percent of the civilian labor force is employed directly by the Department of Defense. Similarly, Defense Department contract cancellations represent only a small fraction of total defense procurement and even smaller proportion of the GNP.

Mr. Chu suggested that a good deal of the interest in conversion assistance really reflects a concern with protecting the existing income distribution, rather than promoting the mobility of capital or labor. A large share of the funds for trade adjustment assistance, for example, have been spent on compensating losers to import competition; rarely has any money been spent on retraining. Wearing his Chicago hat, Mr. Chu expressed skepticism about income-support programs, especially about long-term income support, because of the possible adverse effect on capital and labor mobility. He suggested instead that emphasis be given to improving incentives for capital and labor to move quickly to new and more productive pursuits as the economy grows and undergoes change.

Both Mr. Oswald and Mr. Casraiss took strong exception to certain of Mr. Chu's statements. Mr. Casraiss noted that, even if average wages are higher in an unstable industry, there are still individual winners and losers when change occurs. Moreover, he questioned whether workers should be encouraged to move quickly from an area that is losing jobs, in view of the effect on a community when large numbers of workers suddenly leave.

CON HOWE

Mr. Howe focused on what it is like to be a local political officeholder faced with the problem of economic dislocation. He offered a summary of the Massachusetts experience with military base closings as an illustration.

The two states hardest hit by the 1973 Defense Department base closings were Massachusetts and Rhode Island. Five bases were closed in Massachusetts, involving the direct loss of nearly 14,000 jobs (6,450 civilian, 7,400 military). An even larger number of workers--some 1,000 of whom were Massachusetts residents--were affected by the base closings in Rhode Island. Thousands of acres of federal property were declared surplus. In addition, the cutback in military spending caused a secondary employment loss of more than 1,200 Massachusetts jobs. Losses in state income and sales taxes were estimated at $5.5 million per year, and the gross business volume loss was estimated at an annual $270 million. Moreover, these base closings followed five years of continued cutbacks in defense contracts with Massachusetts firms.

Mr. Howe argued that local leaders cannot merely accept such events. While the benefits of base closings accrue to the entire nation, the costs are borne by local communities.

As a result of the 1973 experience, the Commonwealth of Massachusetts created a commission to act as an umbrella for local task forces made up of business, labor and local officials. In the task forces' planning for redevelopment, the major problem was the inability to attract private investment because of the size and uniqueness of the properties, the long-term nature of the redevelopment, and the risks involved. The only solution that mitigated these problems appeared to be some public investment. Thus, the Massachusetts Government Land Bank was created with $40 million in bonding authority to finance the acquisition of surplus property for economic redevelopment. Over the five-year period, a substantial amount of property and facilities were transferred to local communities for recreational and other public purposes. The greatest effort, however, has been directed toward producing new jobs. Of the 6,450 civilian jobs lost because of base closings, about 1,800 have been restored in two large industrial parks financed by the Land Bank.

Mr. Howe stressed the inability of state and local officials to deal effectively with this kind of dislocation. He held that it was necessary to differentiate between long-term deterioration and sudden, severe dislocations. Some of the Massachusetts military bases, he pointed out, had been in operation for 200 years. There could have been no expectation of change. The size of dislocation also was significant, causing great hardship to communities where 10 percent or more of the municipalities' land area was military base property. The towns, as is often typical of base communities, were very small and without diversified economies to absorb some of the shocks.

In addition, these base closings were the largest economic and land-use problems most of the local communities had ever faced. Most public officials in such communities are employed full time in other jobs and receive only part-time compensation for their public duties. Thus, managerial resources tend to be less than adequate.

Mr. Howe emphasized that, in deciding what the government can and should do, state and local officials have to pick up the pieces left by private and federal decisions. Officials cannot relocate their communities to escape the effects--Massachusetts cannot pick up and move to the sunbelt. Thus, state and local governments have a role in economic conversion because they have no choice. They should concentrate, therefore, on long-range planning and investment to assist adjustment. State purchases of surplus federal property do not take the place of private investment, but they should lead to it. The state's role is to break down the size and cost of investment in order to attract private investors and provide new private sector employment opportunities.

Mr. Howe suggested that federal compensation for base closings was necessary, but he was not optimistic that it would eliminate initial state and local opposition to base shutdowns. Such economic change inevitably creates much fear among the people to be affected, and the prospect of federal compensation seems too vague at the local level. What is needed is a bridge between federal assistance and local management of economic conversion. This bridge should facilitate a partnership in which local governments retain control of economic conversion within their jurisdictions, while the federal government provides such basic tools as grants for planning and capital improvements, public works, urban development funds, and so forth. In such partnerships, much of the economic recovery planning should be done by state banks. The perspective of the federal government alone is too broad, and that of local governments is too narrow.

JERRY JASINOWSKI

According to Mr. Jasinowski, the CBO definition of economic conversion -- a process that moves resources to more productive pursuits in response to dislocation -- leaves several questions unanswered. Economic conversion can be interpreted in different ways. Senator George McGovern, who popularized the term, meant that major sectors of the economy would be converted from one general activity to another in response to shifting national priorities. These shifts would primarily involve a movement from defense to non-defense activities and would be quite massive.

On the other hand, the Commerce Department's experience with trade adjustment assistance suggests that conversion should take place in stages, depending on the severity of the problem. Mr. Jasinowski described four types of assistance: assistance for revitalizing firms that can continue their present activities; assistance to other firms and workers to reorient them toward other activities; assistance to communities to attract new industry and helping workers shift to new jobs or relocate in other areas; and on an interim basis, assistance to workers, in the form of compensation, while they are adjusting to the change and recovering.

Mr. Jasinowski also noted that the CBO definition of economic conversion could either be narrowed or broadened. It could focus only on government actions that cause significant dislocation. Or it could include dislocations caused by acts of God, major failure of the private market, or even the gradual deterioration of a particular firm or industry. Mr. Jasinowski noted, however, that a movement away from the former, more narrow, definition is a shift toward a comprehensive industrial policy for the United States.

Mr. Jasinowski suggested that, in deciding to intervene with conversion assistance, the following factors have to be weighed and balanced:

* Market Superiority. Since the market naturally shifts resources to more productive uses without government aid, the private sector may be able to do the job better.

* Avoiding Cyclical Dislocations. Government conversion aid cannot attempt to counter cyclical fluctuations.

* Long-term Economic Decline. Conversion programs are of little help to areas that are suffering long-term economic decline. Conventional economic development programs are more appropriate for such purposes.

* Causes. Assistance should depend on the cause of dislocation. Government-caused dislocations can be categorized by function (trade regulation and base closings) and by their effects on economic activity (stimulating competition, imposing new costs, or withdrawing government demand). "Market failure" causes include the immobility of resources (for example, energy), the need to maintain competition (for example, the American Motors Corporation situation), and rapid changes in technology.

* Severity. Three broad measures of severity of dislocation have to be considered — magnitude, suddenness, and duration (permanence or transience).

* Likelihood of success or failure.

* Political Considerations. What is fair assistance to the affected group? What broad benefits should be taken into account to offset the cost of assistance?

* Budgetary Resources. Economic conversion occurs within the constraints of budgetary resources. The competition for funds is much greater with a tight budget than during times of budgetary abundance.

Mr. Jasinowski noted that, in deciding how the government intervenes, there can be major conflicts between equity and efficiency that have implications for program design. If equity is the major concern, the emphasis should be on providing unconditional cash payments to injured parties. But compensation alone does little to ensure that resources will be reallocated. If the emphasis is on efficiency, assistance should be tied to changes in economic behavior by workers, firms, and communities — increasing incentives for adjustment by tying payments to retraining, relocation, technical assistance to industry, and so forth. But asking the affected parties to change behavior makes adjustment less popular than compensation and less acceptable. This argues strongly for government insistence on adjustment where possible, to encourage needed changes.

A further consideration in deciding how government intervenes relates to whether an ad hoc approach or a general economic conversion program is better. The ad hoc approach operates without clear standards and may be neither efficient nor fair. The general approach offers a highly structured response to particular problems. Mr. Jasinowski questioned whether there is enough knowledge to make the latter approach successful. A need to find a middle ground exists.

GENERAL DISCUSSION

Dr. Rivlin summed up her impressions of the conference noting that the problem is serious, however defined. Although there was evidently no consensus on what ought to be done, there was agreement that it is easier to achieve conversion in an expanding economy. The major issues reflected differences between people who view adjustment as a general problem relating to change within a free enterprise system and those who rely on the special aspects of a given situation for determining the appropriateness of intervention.

NOTES

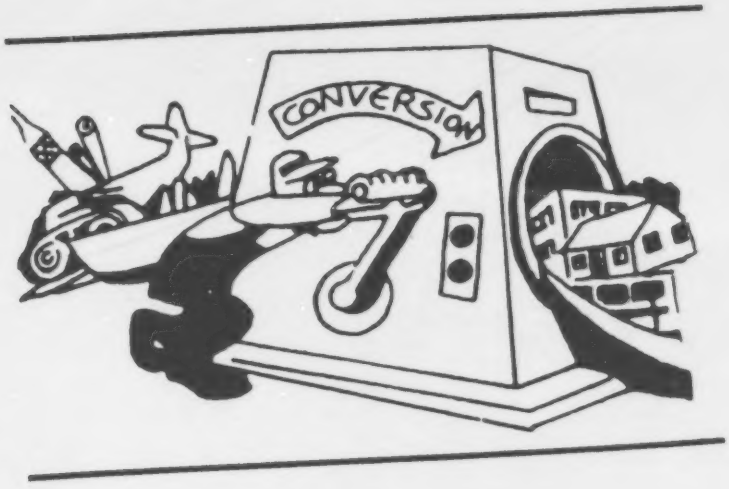
[1] Mr. Howe seconded this point, noting that the need for gradual transition also applies to local governments dealing with federal policy.

[2] Economic Dislocation: Plant Closings, Plant Relocations and Plant Conversion, Joint Report of the Labor Union Study Tour Participants (May 1979).

[3] Because of changes in the meatpacking industry, Armour closed several plants in 1959-1962. Assistance was provided to affected workers through joint labor/management committees.

[4] Mr. Chu was asked to present the conservative "Chicago school" point of view, undertaking a defense of the laissez-faire position. His statement does not necessarily represent his own views or those of CBO.

[5] J.P. Smith and F.R. Welch, Black/White Male Earnings and Employment: 1960-1970, R-1666-DOL, (Santa Monica: The Rand Corporation, June 1975), p. 61.


CONVERSION

SHUTDOWN: A GUIDE FOR COMMUNITIES FACING PLANT CLOSINGS (Chapters II and III)

Shutdown: A Guide for Communities Facing Plant Closings, Chapters II and III (January 1982) Northeast-Midwest Institute, Washington, DC.

II. Some Perspectives on the Problem

As we enter the 1980s, our national economy is restructuring itself. Heavy manufacturing, once the central feature of industrialization, has fallen prey to new forces remolding the marketplace in the late 20th century. High technology products and services and new energy industries are experiencing unprecedented growth. Inflation, energy costs, new technologies, new industries, and foreign competition in both labor and products are changing the way we live, what we buy, what we produce, and where and how we produce it. The economy is changing, and individual businesses and the skills they require are changing along with it. Economic dislocation -- plant shutdowns, mass layoffs, corporate disinvestment -- is a visible and disruptive component of this process.

No one region of the country is immune to these changes: plant closings occur in the Sunbelt states at about the same rate as in the older manufacturing states of the Northeast and Midwest.[1] A California state official recently remarked, "It's been a shock to everyone... This kind of problem happens in Detroit or Pittsburgh, not California; we open plants, not close them, and we now have to deal with the reality that things have changed."[2] These realities are confirmed by David Brich of the Massachusetts Institute of Technology, who explains in his study, The Job Generation Process: "The rate of job loss due to plant closings or plant shrinkages is about the same everywhere and is quite high -- 8 percent per year. Northern cities are not losing jobs faster than Southern ones."[3]

The regions of the nation, however, vary markedly in their ability to replace these lost jobs. Barry Bluestone of Boston College and Bennett Harrison of M.I.T. estimate that between 1969 and 1976, Northeastern and Midwestern states lost 111 jobs for every 100 new jobs generated, while the South and West lost only 80 for every 100 new positions created.[4] Much of this new job creation in the South and West is attributable to the expansion of existing firms and the opening of new branch locations. Regional differences in the rate of job replacement simply mean that communities in the Northeast and Midwest may have the most at stake when a plan or federal facility in their state closes.

Why Plants Close

There is no simple answer to the question of why plants close. With the myriad factors that influence how a business operates come myriad possible reasons why a plant closes. Many of these factors are economic in nature: changes in market demand or foreign competition, for example. Yet many other factors are not so easily explained by economic forces. Although no all-inclusive list has been assembled, our research has found a number of frequently cited reasons for closings:

* inadequate capital investment
* heavy foreign and domestic competition
* rising costs, such as energy, labor, and taxes
* consolidation of company operations
* discontinuance of a product line
* declining market demand
* mismanagement
* poor long-term planning
* relocation of facilities
* labor-management conflict

For some plants, the reason for closing has been fairly self-evident -- no customers. This was the case for Dayton Tire Company, a subsidiary of Firestone Incorporated, in early 1980. Dayton Tire Company made bias-ply tires, while consumers were demanding safer, more fuel-efficient radials. At the same time, the bottom was falling out of the domestic car market, pulling the rubber industry down with it. Dayton Tire Company just could not survive in this environment.

For other plants, such as the Library Bureau in Herkimer, New York, the reasons were not so clear. The Library Bureau, a small library furniture factory, had brought in steady business since it opened in the Mohawk Valley at the turn of the century. When Sperry Rand, the computer conglomerate that bought the plant in 1955, decided to liquidate the plant in 1976, it had just turned a net profit of $321,000 and had taken in 15 percent of the domestic library hardware business.[5] Sperry Rand, however, decided that consistent profits of 6 or 7 percent were not enough; it wanted a 22 percent return on invested capital.[6]

In national terms, the information needed to truly understand the problem is lacking. No comprehensive data base exists at the federal or state level that tracks plant closures and why they occur. A number of states have begun to collect their own data on local business closings. However, much of this information is solely in the possession of the private sector, and thus ultimately may remain unknown.

The Costs

Whatever the reason for closings, the costs for everyone involved -- business, labor, and government -- are high and rising. In a study done for the Congressional Research Service, Nonna E. Noto and Dennis Zimmerman found that although the absolute number of business failures has not changed dramatically over time, the average liability -- or the cost of bankruptcy per firm -- has. The average liability has grown from $50,000 per firm in 1950 to $264,000 per firm in 1978.[7]

Long-term structural unemployment is a persistent and growing problem throughout the nation, as workers are unemployed more frequently and for longer periods of time. The layoff rates in the manufacturing sector are very high and climbing rapidly. As of October 1981, the national layoff rate was 2.2 workers per 100 employees.[8] This represents a significant increase over the average 1.6 layoffs per 100 workers experienced between 1960 and 1970 and the 1.4 layoffs per 100 workers from 1970 to 1980.[9] The preliminary figures for the layoff rate in the manufacturing sector for November 1981 showed a jump to 2.3.[10] In one year, from August 1980 to August 1981, the average duration of unemployment grew two weeks longer, to 14.5 weeks.[11] Mass layoffs on the scale of Youngstown, Ohio, or Hamtramck, Michigan,

create even greater "ripple effects" throughout a community, causing even more closings before the community can recover. The large majority of workers never regain their original income. In total, the whole nation suffers the consequences of idled community resources and idled workers.

The fate of any given community's economy following a closing varies widely; the U.S. Department of Transportation conducted numerous community impact studies on localities affected by auto and related supplier industry closings. The Transportation Department then attempted to construct what happens to a typical small community that is heavily dependent on the auto sector when its major employer shuts down. The statistics for "Anytown, U.S.A.," are given below to demonstrate the varied ways a closing can affect a community.

EFFECT OF A PLANT CLOSING ON A HYPOTHETICAL COMMUNITY

	Before (1979)
Population	200,000
Total Employment	94,000
Employment by Primary and Secondary Auto Sectors	50,000
Unemployment	6.6 percent
Tax Revenues	$24 million
New Housing Sales	1,000

	After (1981)
Population	Down 10 percent
Total Employment	Down 20 percent
Employment by Primary and Secondary Auto Sectors	Down 40 percent
Unemployment	Up 200 percent
Tax Revenues	Down 35 percent
New Housing Sales	Down 50 percent

SOURCE: George Byron and John O'Donnell, Facilities Planning and Regional Employment Assessment (Cambridge, Massachusetts: Department of Transportation Systems Center).

The Bottom Line

No matter what the causes, costs, or cures for facility closings may appear to be, the problem is real and immediate for many communities. A plant or base closing demands the greatest energy from the community that itself gave life to the facility. It challenges community, labor, and business leaders, first to limit the damages these changes inflict on the local economic base and then to restructure the local economy to insure more long-run stability. The first step means crisis management; the second step requires long-range planning. It is never an easy task, and the path for every community is its own.

NOTES

1. James W. Singer, "A Radical Solution to the Problem of Runaway Plants," National Journal, June 23, 1979, p. 1042.

2. Robert Lindsey, "California Facing A New Reality in Plant Closing," New York Times, October 26, 1981, p. B15.

3. David L. Birch, The Job Generation Process (Cambridge, Massachusetts): Harvard-M.I.T. Joint Center for Urban Studies, 1979), p.4.

4. Singer, P. 1042.

5. Richard G. Case, "Saving the 'LB,'" Syracuse-Herald American, October 30, 1977, p. 5 (Empire Section).

6. Daniel Zwerdling, "Employee Ownership: How Well Is It Working?, Working Papers for a New Society (May-June 1979), p. 18

7. Nonna A. Nota and Dennis Zimmerman, Federal Assistance to Troubled Firms? An Analysis of Business Failure Data (Washington, D.C.: Congressional Research Service, December 10, 1980), p. 39.

8. U.S. Department of Labor, Bureau of Labor Statistics, U.S. Manufacturing, Seasonally Adjusted Layoffs per 100 Employees per Month (January 11, 1982).

9. U.S. Department of Labor, Bureau of Labor Statistics, U.S. Manufacturing, Seasonally Adjusted Layoffs per 100 Employees per Month (December 4, 1981).

10. U.S. Manufacturing, Seasonally Adjusted Layoffs per 100 Employees per Month (January 11, 1982).

11. U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, September 1981 (Washington, D.C.: Government Printing Office, 1981), p. 32.

III. Stage 1: Preliminrary Indications

Rarely does a community receive substantial advance notice before a plant or military base officially closes. Workers for Wisconsin Steel in Chicago, Illinois, came in one Friday morning to find that the plant had closed and all of their paychecks had bounced. The workers had been told by company officials just the evening before that there were no plans to close the plant. Employees at the Empire Steel Plant in Portsmouth, Ohio found out in January 1980 that management had decided to terminate the division by June. Even if the official notice comes with little or no warning, however, many preliminary signs point to trouble beforehand. Understanding these signs and acting upon them is critical for many communities. The most opportune time to avert a plant closing or mitigate its adverse effects is before the closing itself.

What warning signals indicate that a plant or base may be in danger of closing? The signals are many, including changes in the work force, in the market, and in management actions. Many changes are subtle and not significant in themselves but together point to disinvestment, dissatisfaction, and impending danger. A number of communities with well-developed recovery and adjustment programs have initiated "early-warning" information systems to spot these problems in the beginning stages. Other communities track the signals on a more ad hoc basis.

For private-sector facilities, these early-warnings indicators can be grouped into three categories: market, management, and work force. For public-sector facilities, work force and management indicators are useful. Defense Department facilities undergo a slightly different process because major defense realignments are covered under the National Environmental Protection Act (NEPA). The Pentagon must inform communities being studied for realignment. Once a draft environmental impact study is completed, the Defense Department must allow for a public comment period of at least 45 days. The Defense Department's Office of Economic Adjustment will also conduct a community economic impact study if the community requests it.

In all cases, there are clear warning signs before a facility closing:

Market Indicators

* Overall decline in sales or profits in an industrial sector (e.g., auto, steel)
* Decline in demand for products the plant produces (e.g., bias tires)
* Industry shifts to overseas production (e.g., electrical industry, consumer goods, pharmaceutical industry)
* Growth of foreign competition (e.g., shoes, textiles)
* Changes in location of markets
* Changes in production technology

Management (Private) Indicators

* Aging plant and equipment that a firm is unwilling to replace or modernize

* Slowdown of operations
* Sale of excess capital stock or reduction of inventories
* No expansion of existing facilities with overcrowded working conditions
* Transfer or consolidation of certain divisions or operations
* Constant production below capacity
* Transfer of parent plant operations to a new site
* Policy statements at corporate stockholder meetings
* Management indicators in closely held companies
  — aging of owners with no clear line of succession
  — decreasing owner involvement in operations

Management (Public) Indicators

* Large reductions in parent agency funding
* Reduced operations and maintenance at the facility; little to no appropriations for new construction
* Changes in facility's mission (function)
  — complete phase-out of mission
  — trend towards consolidating the mission into larger complexes
  — changes in technology requiring fewer facilities to carry out a particular mission
* Transfer of operations or studies to determine cost of transferring operations to other facilities

Work Force Indicators

* Large transfers of personnel
* Net reduction in personnel, particularly skilled workers
* Prolonged or frequent management-labor disputes coupled with high labor turnover or absenteeism

This list is by no means exhaustive. The problems of each plant or federal facility can vary widely. More important, the existence of these problems at any one individual plant does not always indicate potential closing. Plant shrinkage itself can be part of a firm's natural business cycle, eventually reaching a point of equilibrium. These warning signals are most useful for local leaders who want to take the offensive prior to a possible shutdown. The ability to spot danger signals in advance of a facility closing and well within the time for effective intervention is vital. Once danger is spotted, however, the community response should not necessarily be to save the particular plant or plants. The strategy chosen should reflect an understanding of the individual plant and the overall market for its product. Community leaders must weigh the benefits of maintaining the plant's original function against the economic potential of various alternatives. Appendix B gives examples of alternatives chosen by various communities. This analysis is most effectively carried out during an early stage where a number of operational problems can be worked out, local resources mobilized, and planning begun. In every case it is in the community's interest to take immediate action. Thus, the next chapter should be helpful both to those who have received official announcement of a closing and to those who have not.

WHY PLANT CLOSING LEGISLATION IS NECESSARY

"Why Plant Closing Legislation is Necessary," Sheldon Friedman. Industrial and Labor Relations Report, XVIII:2 (Spring 1981)

The Devastating Impact of Shutdowns

Few corporate decisions cut a wider social or economic swath than decisions to close or move a plant. Despite the potentially far-reaching consequences for workers, communities and the general public, corporations presently are under few legal restrictions with regard to the way in which they make or carry out these momentous decisions. In the absence of such guidelines, the overriding consideration in nearly all cases is the anticipated impact on the corporation's "bottom line." If the public's interest is served by this procedure, it is only by coincidence.

Even when the decision to close is "correct," as it may often be, the lack of public policy in regard to how the shutdown should be carried out results in corporate actions which cause enormous personal hardship and needless social trauma. For affected workers and communities, adjusting to a plant closing is never easy, but the lack of any kind of legislated standards virtually guarantees that adjustment will be extremely painful and unnecessarily difficult.

At this time, long-service workers can find themselves dumped on the scrap heap by their departing employer without so much as a handshake. Medical insurance coverage is often cruelly stripped away, at a time when workers and their families are most under stress and most in need of that kind of protection. The adverse health and psychological consequences of job loss are well documented and substantial, ranging from increased incidence of high blood pressure and heart disease to peptic ulcers, child abuse, divorce and even suicide.

Yet fewer than a third of the unemployed in this country have any medical insurance coverage at all. Those that do must pay premiums of up to half their unemployment checks: in addition to being the only industrialized nation which does not provide its unemployed with medical insurance protection, our patchwork unemployment compensation system offers the lowest income replacement ratio and shortest duration of benefit entitlement in the industrialized world.

In a way roughly analogous to the loss of health insurance, the community can be stripped of vital tax revenues in the wake of a major plant closing, just at the time when the need for social services to cope with the effects of the closing is greatest.

For affected workers and their families, the closing can be nothing short of catastrophic. A large segment of the local work force can suddenly be thrust onto the labor market at the worst possible time, in a desperate scramble for jobs which do not exist, in a depressed local economy that is in a tailspin as a result of the closing. For many workers, plans of a lifetime can go down the drain, as car, mortgage and the kids' college tuition bills pile up unpaid.

To be sure, a new job can usually be found eventually, but often it will pay far less and be even less secure than the job which has been lost. Relocation to a new job in a locale with a sunnier "business climate" is always an option for those who have transferable skills, are ready and able to uproot their families and leave old friends, and are willing to take a big loss on forced sale of a house that no one wants in a depressed industrial town. The less mobile and less skilled are left behind.

For older workers and those who are in poor health — even though they could perform their previous job perfectly well — finding another job can be especially difficult. Skills painstakingly acquired during a career of work in the closed plant may have limited or negligible job market "salability". For minority workers abandoned by runaway employers in our decaying center cities, job market prospects may be especially dim.

Despite important protections under the Employee Retirement Income Security Act (ERISA), many older workers and retirees face substantial pension reductions if their plant closes down.

Corporate "Responsibility"

Far from being sensitive to these serious human problems which their decisions create, too many corporations close plants in ways which run the gamut from callous to irresponsible. Consider for example, the amount of advance notice provided. Advance notice is critical, if there is to be meaningful planning to offset the effects of the shutdown. Retraining programs can be put in place; a comprehensive job search assistance effort can be designed. Programs to create replacement jobs can be planned and implemented -- if there is sufficient lead time to put these programs into place.

The potential success of these and other adjustment assistance efforts depends critically upon provision of timely advance notice. Yet now, in all but a relative handful of cases, the amount of advance notice given is determined exclusively by, and at the convenience of, the departing corporation.

This means that unless the corporation is interested in obtaining some concession from its workers or the community that would induce it to stay -- such as a wage freeze or tax abatement -- then in practice very little advance notice can be counted on. Indeed, many corporations are more than glad to reinforce their employees' natural psychological responses — denial and disbelief -- by systematically concealing the company's true intentions to close down. Even within management ranks, information regarding the shutdown decision is carefully restricted to those with a clear "need to know."

Often, neither union nor community officials are afforded the courtesy of prenotification, to say nothing of consultation, before public announcement of the shutdown is made. Transfer rights or even preferential hiring rights to other company plants are usually out of the question, unless explicitly provided for in the preexisting collective bargaining agreement. Provisions which could be of enormous help in assisting workers to adjust -- such as relocation benefits, job search assistance, tuition refund or other retraining help -- range from limited to nonexistent. Having reached its shutdown decision in secret and without meaningful consultation, the corporation's only wish is to implement that decision as cheaply and quickly as possible. In far too many cases, they can do just that, as abandoned workers and devastated communities are relegated to the industrial scrap heap.

Worse yet, as Professors Aronson and McKersie have found, the terminated workers can find themselves blacklisted by other local employers because of union activism, age, or so-called high "wage expectations."

It is undoubtedly true that some corporations act responsibly in plant closing situations. In recent Senate hearings, testimony was presented by a major tobacco company (see page 26) which reportedly went to considerable lengths to cushion the impact of a large plant closing on its workers and the affected community. Another large corporation, in the computer industry, claims that if a proposed merger or acquisition would lead to a consolidation of operations resulting in a plant closing, that can be cause for the board of directors to turn down the deal.

Examples like this tobacco company and computer company are often pointed to by representatives of the business community as evidence that corporations can act responsibly in plant closings and that legislation therefore is not necessary. In reality, these instances of allegedly responsible corporate behavior are exceptions, not the norm.

For every "responsible" company that avoids mergers that would lead to a plant closing, many other corporations enter such mergers with gusto, in search of a sturdy "cash cow" to milk. Profits from the aging plant are reinvested elsewhere with nothing plowed back. It does not take many years of this kind of looting before the acquired plant can no longer meet the exorbitant return-on- investment target set by the head office -- sometimes as high as 25 percent. At that point, the plant, which just may happen to be the economic lifeblood of a community, is on the auction block. Thus while there are instances of corporations which try to act responsibly in plant shutdown situations, in the absence of rules and regulations which apply to all, the responsible few are bound to lose ground to greedier, harder-nosed competitors. In a competitive market economy, voluntary social responsibility on the part of a corporation is akin to a recessive genetic trait. It is difficult to imagine what kind of social jungle we would be living in today, if we relied on corporate voluntarism rather than governmental regulation: to prohibit child labor; to establish forty hours as the standard workweek; to assure purity of food and drugs; to prevent stock market fraud; to protect workers' health and safety on the job; to protect consumers against price-gouging and unsafe products; to protect the civil rights of women and minorities;and to protect workers' rights to organize. Contrary to the simplistic prescription of conservatives, these and other regulations are badly needed to protect the public against outrageous abuse. In virtually every case, the abuse in question went on for years before legislative action was taken, long past the point at which it should have been clear that reliance on voluntarism and appeals to "corporate social responsibilty" simply were not enough.

With respect to proposed plant closing legislation, contrary to the shrill misrepresentation which has been heaped upon it by corporate opponents and their numerous spokespersons in academia, such legislation is eminently reasonable, badly needed and long overdue.

The Ford-Riegle Bill

At the federal level, the major plant closing bill introduced into the last session of Congress was Congressman Bill Ford's (D-Mich.) and Senator Don Riegle's (D-Mich.) "National Employment Priorities Act." There were sixty cosponsors in the House, including the entire Black Caucus.

The bill's main provisions include substantial advance notice of plant closing or other large-scale permanent layoff; creation of a mechanism for hearings into the reasons for the proposed closing, including a report on alternatives to the closing or steps which should be taken to mitigate its impact; assistance to affected employees, including maintenance and fringe benefit continuation for up to one year; transfer rights; development and implementation of a retraining and job search assistance plan; assistance to corporations in certain instances to avert shutdowns, including targeted federal procurement; and assistance to affected units of local government in lieu of tax revenues which will be lost, to continue provision of vital social services without interruption, and for economic development purposes. Significantly, a planning mechanism would also be created to identify -- well in advance -- industries, companies and plants which are likely to be in trouble, to avert that trouble early if possible, and if not, to get a head start on targeted creation of alternative replacement jobs.

Enactment of this kind of legislation would provide us with a meaningful beginning toward a rational and humane framework for dealing with plant closings, essentially comparable to that which many countries of Western Europe have had for years. Despite the corporate criticism which has been directed against the proposed legislation in the U.S., many of our largest and most successful corporations have for years had extensive and profitable operations in these same European nations which strictly regulate plant closings to protect workers and the public interest. For workers and communities in the U.S., comparable protections are badly needed and long overdue.

Such legislation would not diminish in any way a corporation's "right" to close or move -- contrary to the alarmist claims of the business community -- any more than a 55 m.p.h. speed limit restricts our "right to drive." In certain cases, charging a corporation for pay of the social costs stemming from a shutdown might result in a decision to keep the plant open. In those cases where the social costs resulting from the shutdown outweigh the corporate gains, sound public policy suggests that shutdowns should not occur. For example, certain profitable branch plants which fail to meet excessive head office return-on-investment criteria might no longer be closed if the Ford-Riegle bill were law. The concern that the proposed legislation is inflationary or would decrease the overall efficiency of the economy is not justified; in fact, deterring this kind of antisocial plant closing would produce the opposite economic result. In other cases, where the plant is outmoded or inefficient, or manufactures a product for which there is no longer any market, the shutdown would probably take place unless conversion to alternative production were possible. However, the shutdown would be implemented with far less devastating impact on workers and the affected community.

At the UAW's latest convention last June, no subject drew a more emotional response from the delegates or was debated longer or more intensely than plant closings and other economic dislocations. It was a poignant session, filled with the realization among many other delegates from Dodge Main, Mahwah, Pico Rivera and other plants that had been closed, that this convention would be their last.

The resolution which the delegates adopted committed the Union to redouble our efforts in support of a three-point program on behalf of members who become victims of plant closings and other economic dislocations. First, in collective bargaining, much has been accomplished to assist plant closing victims, but much more remains to be done and will be done. Second, with respect to existing government programs: though they are wholly inadequate, some could be of positive assistance, and in these cases

unrelenting pressure must be brought to bear, to see to it that these existing programs are utilized to help affected workers and communities to the maximum extent possible. But the long-range goal, to which the Union pledged to direct its energy and attention when the time is right, is eventual enactment of meaningful, comprehensive, federal plant closing legislation along the lines of the Ford-Riegle bill.

Beyond Ford-Riegle

It is clear that many closings occur in response to powerful market forces. Legislation would not prevent such closings, but it would have a significant effect on the way in which they are carried out. It is also clear that plant closing legislation does not by itself constitute the kind of "industrial policy" which this nation so badly needs. This legislation is no substitute for democratic economic planning, a comprehensive labor market policy, or a guaranteed individual right to a decent job. Nor is it a substitute for overhaul of a corporate tax code riddled with provisions that subsidize runaways — a floodgate which shows every indication of being opened even wider in the period immediately ahead.

Instead of serious thinking about these and other coherent approaches to industrial policy which are so badly needed, the short-run prospect is for untargeted across-the-board tax cuts which mainly benefit the wealthy, and mounting pressure to turn back the clock on existing hard-won environmental, occupational health and safety, and consumer protection regulations. It is ironic how conservatives who criticize government for allegedly "throwing money" at social problems have no difficulty advocating precisely that if the recipients of the handout are corporations!

Such are the prospects for industrial policy in general and plant closing legislation in particular in the period immediately ahead. But as the recent experience of Britain has shown, the underlying problems are not likely to yield to simplistic knee-jerk solutions and will probably worsen if such bromides are prescribed. For plant closing legislation as for other needed progressive reforms, the time will come.

ECONOMIC DISLOCATION: PLANT CLOSINGS, PLANT RELOCATIONS AND PLANT CONVERSION -- SWEDEN

"Sweden," Chapter II in Economic Dislocation: Plant Closings, Plant Relocations and Plant Conversion, Joint Report of Labor Union Study Tour Participants (UAW, USWA and IAM) May 1, 1979.

Sweden is a capitalist country, with most industry in private hands and most enterprise-level decisions made by agents of private capital. Profit is the "lever" which drives the economy. As a result, Sweden is potentially subject to the same kinds of economic dislocation as we are. Plants close and move; industries decline and grow; imports wreak havoc with domestic industries; multinational corporations export capital and jobs in pursuit of cheaper labor, higher profits -- and lax environmental laws. Indeed, as a small export-oriented country Sweden is even more subject to the vagaries of the world market than the U.S. (About 40% of Sweden's industrial output is export, as against 7% for the U.S.)

Yet Sweden has evolved programs to cope with economic dislocation and change, which cushion the impact on workers and communities. These programs are set within a framework of strong commitment to full employment, and willingness to intervene into the workings of the private economy in order to achieve that goal. The humane and far-sighted policies we learned about owe their existence to the fact that Sweden's labor force is over 70% organized -- including some 90% of blue collar workers -- and to the strength of the Social Democratic Party. Until September 1976, the Social Democratic Party had governed for 44 years, sponsoring legislation like the Job Security Act of 1973, which "put people before profits", in the words of former Prime Minister Olof Palme. Nor have these policies hurt the vitality of Sweden's economy -- far from it. As a result of strenous efforts to maintain full employment, unemployment is extremely low; the standard of living is extremely high (wages are now actually higher than in the United States); and over the long pull, Sweden's rate of inflation has been no worse than average compared with other industrialized countries.

Sweden's main line of defense against the effects of economic dislocation is its national labor market board (AMS); its emphasis is alternative employment and re-training, not handouts. A description of how this remarkable institution operates follows.

AMS -- National Labor Market Board

AMS is at the center of Sweden's world-famous "active labor market policy". It is tripartite, so decisions are made by labor, business and government representatives, not just governmental officials. Of 13 voting members, the unions name six (LO -- The blue collar union federation--3; TCO -- white color workers--2; SACO--Professional workers--1). SAF, the Swedish Employers' Federation, has three representatives, while the government picks two; women have one representative as does the agricultural sector. We were told that within the framework of tripartite representation, the unions historically have had an effective AMS majority. Moreover, most decisions of the Board are unanimous.

Since it is a decision-making board of critical importance in the economy, the Swedish unions view involvement in AMS as one of their most important activities. In their work on the national labor market board, the union representatives are bound in a general way by LO, TCO and SACO convention decisions on employment policy. Each national union (such as the Metal-workers) also devotes a good deal of its convention time to employment policy and programs.

It is important to note that the members of the Board -- with the exception of the Director General and his or her deputy -- stay with their respective organizations even though employment policy is their full-time job. In the case of the union representatives, this means that they are still paid by and accountable to the union; moreover, the trade unionists who sit on the board have channels back to branch and local unions.[1]

AMS is supported at the national level by a staff of 800. It is at the apex of 24 county labor market boards and roughly 220 local employment service offices throughout the country, staffed by a total of about 8,000 civil servants. Sweden's employment service personnel-to-population ratio was said to be well over three times that of the U.S.

Each year AMS proposes its budget to the government for the next fiscal year. The Board's job is to see to it that money is channeled to the kinds of programs which are most needed; thus funds can to some extent be shifted between programs. Even after the budget is decided on by Parliament, moveover, AMS has a great deal of flexibility. Additional money can be obtained from Parliament several times if needed during the year, in response to changing economic conditions. ("It's not possible for unemployed people to wait for the slow wheels of the budgetary process to turn," we were told.) In the area of training, AMS' appropriations are "open-ended".

AMS' annual budget is currently running in the neighborhood of $2 billion. This means that roughly 9% of Sweden's total national budget — and 2.5% of GNP — is at AMS' disposal. Though such comparisons are rough approximations at best, an equivalent sum for a country the size of the United States would probably be close to $50 billion, or $300 for every American. The funds are used to administer a wide range of programs, including the employment service, mobility assistance, training, vocational guidance, and vocational rehabilitation. In addition, there are employment subsidy and inventory stockpiling programs to keep people in their jobs, and a variety of innovative and far-reaching job creation programs. Less than 10% of the total budget goes for cash payments to the unemployed. (Sweden's system of unemployment compensation, interestingly, is largely administered by the unions.)

Just as significant as the size of the total effort and the range and "mix" of existing programs is the remarkable degree of coordination which appears to characterize AMS' active intervention in the Swedish labor market. In contrast to the fragmented responsibility which has hampered the effectiveness of U.S. policy in this area, in Sweden a single agency has at its disposal the administrative means to provide a coordinated and coherent response to an economic dislocation "emergency"; moreover, it has a close working relationship with other governmental ministries whose cooperation may be necessary. The full AMS Board meets every two weeks. It focuses on industries in trouble -- recently steel and shipbuilding. "We plan ahead," our hosts told us.

In addition to administering existing programs, an important part of AMS' job is to initiate and analyze proposals for new legislation. AMS has a signficant input into the process of changing and broadening labor market programs. The unions, in turn, are the acknowledged source of most of the new ideas which have made Sweden's approach to labor market policy so distinctive.

Advance Notice

A key factor in the ability of the Swedish Labor Market Board to cope with economic dislocation is the legal requirement that employers give advance notice of impending dismissals. In Sweden, employers are legally obligated to give three kinds of advance notice before implementing decisions to close plants or permanently reduce the level of employment at a facility:

(1) Notice to the Union;
(2) Notice to the county branch of the labor market board; and
(3) Notice to the individual worker.

Statutory minimums apply to all three kinds of notice. There are penalties for failure to comply; we were told that non-compliance is rare.

The union is supposed to be notified as soon as management has reached a tentative decision to reduce the level of employment at a facility. Under Sweden's new co-determination law, implementation of that decision must await negotiations with the union. The union has full legal rights of access to company financial and other information, and can bring in outside experts (usually national union staff) to evaluate such data. The company is obligated to negotiate every aspect of the decision with the union, including the number of jobs to be eliminated, the timing of any proposed reductions in employment, and supplementary protection (above the statutory/contractual minimums) for workers who will be adversely affected. In contrast to the U.S. situation, time is on the workers' side: Swedish companies must wait for the outcome of these neogitations before proceeding with plans to implement a plant shutdown or reduction in force.

There is a Law on Employment Security which explicitly provides that the employer must warn the union of the intended measure at least one month before a planned lay-off, if the reason is "lack of work" (i.e., inadequate demand or other economic cause). This requirement applies to temporary layoffs as well. The company is further obligated to offer to begin negotiations with the union not later than one week after the warning has been issued.

If the parties disagree about whether the lay-off is justified, employment does not cease until there has been a final resolution of the disagreement by a Labor Court. The Court is empowered to modify or delay the lay-off.

The company must also give advance notice to the county branch of the labor market board, if five or more jobs are involved. The minimum period of notice ranges from two months if as few as five workers are affected, up to six months if the company plans to reduce employment by 101 or more, according to the following schedule:

* Warning is to be given to the County Labor Board at least two months before a reduction of the labor force if a maximum of 25 workers are involved; four months if 25-100 people are involved; six months if 101 or more workers are involved; if the layoff is temporary, at least one month's notice must be given.

Since the company doesn't know whether it will be able to reduce employment until negotiations with the union are concluded, in practice these two periods of advance notice (one month or more to the union and up to six to the County Labor Market Board) can run consecutively.

In addition, there is a statutory requirement that prospectively discharged individuals be given advance notice may also run consecutively with the notice to the County Labor Market Board. The order in which individuals must be retained in permanent and temporary layoffs is fairly clear in the law -- seniority in the plant (or other workplace) is the principal consideration. This means that the company often does have a considerable amount of background knowledge on which to base warnings to individuals at about the same time as the County Labor Market Board is warned. However, the individual employee has two weeks after being given notice to challenge the employer's decision before the Labor Court. The Court is mandated to deal with such matters promptly.

The County Labor Market Board and local employment service also put great stress on protecting workers who would be in the weakest position if they were thrust onto the labor market. This means in practice that handicapped and older workers get special protection in the event their employer is planning a layoff - typically, such workers must be retained, and the labor market authorities are empowered to see to it that they are. In contrast to West Germany, Sweden has specifically rejected encouragement of early retirement as a "solution" to the problem of unemployment.

There is a pervasive philosophy that handicapped and older workers ought to be guaranteed the right to make a productive contribution to society. This goes well beyond protecting such people in the event of retrenchment at their current place of employment. Over 5,000 "adjustment groups" have been formed at Swedish workplaces. These tripartite (union, management, local government) bodies arrange employment for the handicapped. They facilitate in-plant transfers to less arduous or demanding work (at no loss in pay), set up in-plant vocational rehabilitation and retraining programs, and assist the handicapped in many other ways.

The employment service also actively refers handicapped job applicants to prospective employers, and is empowered to insist that a specified minimum number of them be hired.

Early warning of impending dislocations is extremely important for several reasons. First, it gains time to reassign workers inside the plant, as attrition reduces the need for outright dismissals. Second, the government has a program which pays 75% of a worker's wages for repair or other nonproduction work at firms in temporary difficulty; this subsidy rises to 90% for workers 50 years old and over, and to workers in "exposed industries" (industries especially hard-hit by import competition). Early warning gives the government time to evaluate the specific situation and set up such a program if it is determined that layoffs can be forestalled. Third, early warning greatly enhances labor mobility. It gives the employment service the chance to arrange necessary retraining programs while prospectively affected workers are still on the job, and facilitates rational and thorough job search by those workers. Prospective new employers are also alerted; their planning is likewise facilitated.

Indeed, trade unionists we met with felt that the periods of notice currently provided in the law were not long enough.

It should be noted that in the final analysis, the decision to shut down an operation remains at the discretion of the company — even if the reason is simply a rate of profit which it judges to be inadequate, rather than actual financial losses. This apparently remains true even under the new Codetermination Law. Indeed, this is a source of considerable rank and file dissatisfaction with the new law, because in the end in most cases the shutdown still occurs.

The Local Employment Service And Joint Consultation Groups

When the company does give the County Labor Market Board notice of an impending reduction in force, the local employment service is triggered into action. If the planned cutback or closing is sizable, the employment service in the affected locality may be given additional staff. The employment service typically calls a meeting of all interested parties, including municipal government officials, management, the union, and affected workers, to describe the assistance that is available to facilitate adjustment to the company's cutback plans. Often a "joint consultation" group is formed, composed of representatives of the employment service, local government, management, and the union. The purpose of this group is to tailor implementation of various labor market programs (e.g., retraining) to the particular needs of employees at the affected workplace.

The employment service has the authority to move personnel and job-listing computer terminals directly into the plant. Every worker in the affected plant, not just those on the dismissal list (if one has been developed), is eligible for employment service assistance in finding a new job. Unlike the U.S., the listing of all job vacancies with the employment service is in principle mandatory; rules to that effect are now in force in ten countries. The legal requirement to report job openings to the County Labor Market Board facilitates effective job placement services, in contrast to the haphazard situation in the United States, where most openings are not reported to state employment services.[2] People get paid time off to look for alternative employment, as well as travel expenses to check out job vacancies elsewhere. These expenses are paid not just for the workers, but for their spouses as well, to visit several communities before they decide to relocate. (Experience had shown that relocated workers tended to quit jobs at new locations when their spouses were dissatisfied with the new community.) In addition, if a relocated worker's spouse quits his or her job in their former community, he or she can draw unemployment compensation. If a worker agrees to relocate, the Labor Market Board (AMS) pays moving expenses and the extraordinary expenses of temporarily maintaining two households. There is a substantial "starting grant" to individuals who move to new jobs (to purchase furniture, etc.). Although it has turned out to be a small program, AMS can even buy the home of a worker who agrees to relocate. These homes are resold later, often as vacation property; meanwhile, the worker is spared financial loss from forced sale.

By these and other means, voluntary turnover is sometimes sufficient to achieve the reduction in force desired by the company during the period of notice, without any dismissals. In other cases, however, the unemployment service needs more time than would be provided by the statutory period of notice. If so, the labor market board has a variety of means at its disposal for delaying implementation of the employment

cutback. As noted earlier, a wage subsidy can be paid to the old employer, to keep people working temporarily on non-production jobs, or to undertake in-plant retraining; AMS can also target government purchases toward the troubled plant.

A unique program of inventory stockpiling has also been tried (in 1971-72 and again in 1975-76). Under this program, a company faced with a temporary downturn in demand for its product can receive a government subsidy to produce goods for inventory, if it agrees not to dismiss any of its employees. In some cases the crisis is "bridged" and the company no longer desires to reduce the level of employment. At a minimum, AMS buys a considerable amount of additional time to create alternative employment and promote voluntary labor mobility. The inventory stockpiling program was intended to bridge mild recessions. It was originally conceived of as an anti-inflationary as well as employment stabilizing program. Production would be maintained during a business slump, and the output would be released during the subsequent upswing, moderating upward pressure on prices.

Employment Creation

Even if no one is dismissed, a reduction in force means fewer jobs for the community as a whole and potential problems for young people entering the labor market. Accordingly, the stress placed upon targeted job creation has increased greatly within AMS in recent years. While promotion of labor mobility remains an important goal, there has been a tremendous shift in emphasis toward bringing jobs to workers and communities in need. Relocation which forced an individual worker to leave behind family and friends, was increasingly viewed as an inadequate response to the problem of unemployment from a human standpoint. Moreover, encouraging the most mobile workers to abandon economically depressed communities and regions did nothing to solve the problems of those areas and in fact compounded them.

As a result, AMS and the rest of the government in recent years have begun to work diligently to lure replacement industry to areas faced with plant closings and other economic dislocations. Public works jobs and retraining are used extensively, in conjunction with the job creation effort. For example, in a community about to be hit by a plant closing, AMS might employ people temporarily building a road -- which in turn is part of a planned "package" to bring a replacement employer to the town. By the time the new plant is ready to open, labor with the requisite skills will be completing the necessary retraining, while receiving a stipend that is always somewhat higher than unemployment compensation -- at present, close to $40 per day for a typical trainee.

Finding a replacement plant is by no means easy, and the degree of success varies. However, AMS and the government do have a number of means at their disposal to further this objective.

Every local employment service is required to develop a "standby shelf" of such public works projects, updated annually, which can be undertaken on short notice should the need arise. Another very important employment-creation instrument at AMS' disposal is the Swedish system of investment reserves. Every company is allowed by law to set aside a portion of its profits during good years into a tax-free reserve. The funds generated can only be spent on employment-creating investment, and only with approval by the government, or -- after the government's authorization -- by AMS. Although used also as a general countercyclical tool, these reserves provide an additional mechanism for targeting investment to forestall specific economic dislocations, and for cushioning their impact on specific communities.

Another powerful planning tool is a new and potentially far-reaching program under which Sweden's 170 largest companies -- those with 500 employees or more (including subsidiaries of a number of U.S. based multinational corporations) -- are voluntarily disclosing detailed investment and employment five-year plans to the government. This program started in 1976; the first round of information was received in October of that year. Each company's plans are updated and reviewed by the government twice a year; the companies must notify the government of any changes. The government holds informal discussions to help "steer" these private investment plans on a course consistent with emerging job needs of specific communities.

Unemployment compensation is a last resort; as a result of Sweden's strenuous efforts to maintain full employment, the unemployment rate is barely over 2%. People who do lose their job get unemployment compensation varying between $15 and $40 per day, which corresponds to 75% to 90% of their former day. (Benefits must not exceed 91.7% of prior pay.) Moreover, they get uninterrupted medical coverage and no break in their old-age pension accrual.

Restructuring Basic Industry: The Case of Steel

As in the rest of the industrialized capitalist world, Sweden's basic steel industry has been in a deep crisis for several years. In Sweden, however, there haven't been any Youngstowns. Instead, a fundamental "restructuring" (modernization and retrenchment) of the industry is well underway. A substantial permanent reduction in employment in the industry is planned, including the partial and complete closure of a number of facilities. But as we had the opportunity to learn, this massive restructuring is being carried out in such a way as to minimize the adverse impact on affected workers and communities. This humane and relatively smooth transition is the result, in large measure, of the substantial decision-making role of the Swedish trade unions in virtually every step of the restructuring process. The unions' role was explained to us by Alan Larsson, former research director of the Metalworkers' Union. Larsson served as principal consultant to the trade unions during merger negotiations which preceded formation of a new 50% state-owned steel company -- the key step in the restructuring process.[3]

Larsson explained that the unions were direct participants in the steel merger, one of the biggest business combinations in the nation's history. The merger involved two private companies near bankruptcy, plus a state-owned steel maker. Among the operations of the private companies were five units which yielded a combined loss of nearly $200 million during 1977.

A government study on the future of the steel industry, completed in mid-1977, proposed merger as a vehicle for restructuring the industry. Merger negotiations involved three parties: (1) the boards of directors of the three companies (two private and one public); (2) the unions, based on the co-determination law which took effect January 1, 1977 (Svenska Metall and five other national unions, together with 30 of their locals, were represented in the negotiations); and (3) government, represented by the Ministry of Industry. Major operating changes were needed to put the new venture on the road to long-term profitability; among these changes was closure of big parts of several plants.

Merger negotiations were carried out primarily in four groups or committees:

(1) Evaluation Committee -- to determine how the affected units of the three companies should be valued.
(2) Economic planning -- to determine the new company's prospects, and arrange the financing needed for restructuring.
(3) Personnel -- to negotiate the consequences of restructuring for affected employees, and arrange alternative employment.
(4) Organization -- this group worked on the administrative problems of blending three former competitors into a single new company.

Negotiations led to the formation of a new steel company, SSAB, effective January 1, 1978. Total initial equity was about $300 million; the government put up roughly $150 million, for a 50% ownership share. The other two private companies contributed their money-losing plants, which were "valued" at a total of $150 million and for which they were each assigned 25% ownership.

All parties viewed the restructuring effort not as an attempt to prop up a sick or declining industry, but to modernize it with the aim of keeping Swedish steel competitive on world markets. To achieve this objective, a $1.1 billion long-term investment plan was formulated. In the process, several facilities will be shut down and other measures of retrenchment will be implemented.

Although the unions generally recognized the need to close down certain high cost mills and iron ore mines, they never would have agreed to the restructuring without job security guarantees. The new company is trying to effect the merger and major restructuring without any dismissals. Over a ten year period, the company is projecting a decline of about 4,000 jobs, out of a current work force of 17,000; gains and losses will not be distributed evenly at all locations.

Overall, the company has agreed to guarantee everyone's job for at least two years. (For further details, see Appendix 2.) In the case of one mine which is being closed down, five years of lead time will be provided. During this period, workers have an absolute right to stay with the company; the labor market board has been brought in to help arrange alternative employment. Training programs to facilitate transfer within the company, and re-employment elsewhere, are being supported. Employees have liberal transfer rights; transferees will bring their seniority with them. Early retirement is not being relied upon to reduce the level of employment. A great deal of detailed information has been provided to all employees concerning the effect of the planned restructuring on their plant, and the various job security, retraining and relocation programs available to assist them.

Retraining programs are being tailored to the staffing requirements of the restructured company. For example, there are too many technicians and too few cost accountants and marketing specialists; surplus technicians who want to stay with the company are being retrained in these other fields, and when that program is completed two years from now, jobs will be waiting for them.

The employment service has brought its computer listing of job openings — updated daily -- into the plants. New enterprises are being induced to locate in the steel towns, to compensate for the loss of steel industry employment. Shutdowns planned as part of the restructuring effort may be deferred a year or two, partly through government economic incentives to the company; in other cases, new facilities are being opened somewhat earlier than planned.

In addition to learning in a general way about how economic dislocation problems of steel industry restructuring are being handled, we had the opportunity to observe firsthand how one small steel town in central Sweden, and its workers, are being protected.

Cushioning the Impact of Economic Dislocation: Vikmanshyttan

According to historical records, the small town of Vikmanshyttan in central Sweden had been a steel producing center as far back as the 15th century; the mill was the town's only industry. The owner was Stora Kopparberg, one of the first joint stock companies (corporations) in Sweden. It is now a multi-plant conglomerate with lumbering and paper operations, in addition to its steelmaking business.

The parent company was unwilling to invest the roughly $44 million needed for modernization of its remote and outmoded Vikmanshyttan operations. In 1976, the decision was made to close these operations down; more than 400 jobs were involved.

The Government intervened to delay Stora Kopparberg's departure. The time gained was used to assist, under the industrial location scheme, nine new enterprises to locate in the town -- largely in reconverted facilities of the old steel company. Between November 1976 and November 1978, more than 400 new jobs were created in Vikmanshyttan, including 150 by SSAB, the new 50% state-owned steel company. During this period, no one was involuntarily severed from their employment relationship with Stora Kopparberg. Through a variety of government subsidies, the Board kept workers on the company's payroll reconverting the old facilities and undertaking retraining to acquire needed new skills. Other workers from the old plant were temporarily placed on the county payroll — at no reduction in pay -- building public works such as a new road which would be needed by the new business.

Investment reserves administered by AMS were a decisive influence in attracting these businesses. The search for new employment also considered other national goals: one of the new companies, with 50 employees to date, is manufacturing insulation products, as part of Sweden's energy conservation program. In another fascinating case of conversion, an old steel facility is now being used to produce a new product for use by the forestry industry, which will eliminate much of the risk of back injury from the hazardous lumberjack's trade. The product — a small attachment to a portable chain saw -- is based on an invention, and may well become a new Swedish export.

Other new enterprises included a tool shop, and a dental equipment company set up by two former Stora Kopparberg employees.

Much of the capital for these new venture (66%) came from the government, but of this amount, nearly four-fifths was in the form of loans rather than grants. Such loans may be free of amortization and interest for the first years (five and three respectively); the companies will have to pay bank rates (10-11%) thereafter.

The total investment per job created was about $30,000, including government grants and loans, plus private capital. Although dollar comparisons are risky, this works out to a government capital grant of about $4,000 per job created, and a government loan of roughly $16,000. (Investment costs per new job can run considerably higher.)

All employees of the original company were meticulously accounted for. Of the 448 workers on Stora Kopparberg's payroll in Vikmanshyttan as of September 30, 1976, 312 were working for the new enterprises in town as of May 10, 1978. Twenty-six of the original group were on long-term sick leave, 38 had retired, 3 died, and there were 50 voluntary quits. Of the original group of 448, only 19 fell outside all the above categories and had not registered for new jobs as of May 1978; meanwhile, nearly 100 additional jobs were expected to be opening up at the new companies over the next several months and these workers would have priority for them. Of the 312 workers already with their new employer, about 90 were still in retraining as of May.

While the final chapter has yet to be written, it would not be premature to label the Vikmanshyttan economic conversion effort a success. Was everybody happy? No -- the local union people felt their mill was viable and should not have been closed down. They took pride in their skills and their work, and weren't anxious to learn a new trade. Even with income maintenance assured, the affected workers felt psychological stress, and free counseling or therapy was provided for those who needed it. But everyone who wanted to work got new jobs and in many cases, new skills; the community not only survived but now has a diversified industrial base. In the process, everybody's income was kept secure. Their employment relationship with the old company was not severed involuntarily, and in most cases not until new employers were ready to hire the workers. The new companies agreed not to reduce anyone's rate of pay, moreover.

It should be noted that there was no set pattern for what happened at Vikmanshyttan. There was no assurance at the outset that the "rescue operation" would be successful. Nor is there any guarantee at present that Sweden will be as successful in dealing with comparable dislocations in other parts of the country in the future; attracting replacement industry to Vikmanshyttan on a timely basis was no easy task. However, it is important to realize that no new or special programs were utilized in the economic conversion of Vikmanshyttan. Rather, the government, County Labor Market Board, and local officials used the tools already at their disposal -- i.e., programs and policies already in place -- in a planned and coordinated way to achieve a remarkable degree of success.

What they achieved differs markedly from results of parallel efforts undertaken in the United States by the Economic Development Administration and other agencies. Instead of merely "picking up the pieces" after economic disaster has struck -- in the form of financing a new industrial park in a depressed community, for example -- in this Swedish town the government took affirmative steps to forestall economic disaster before it occurred. The time gained was used to provide an effective and by American standards relatively smooth transition of the economic base of the community. That transition was characterized by an extraordinary degree of job and income security protection for the individual workers affected, and by remarkably full and productive utilization of all the economic resources of the town throughout the process.

Nor is what happened in Vikmanshyttan unique. We were told of an old textile city, where the industry was in serious decline. The community's economic base has been reorganized and restructured with a lot of new metalworking industry brought in. An interesting variation on the concept of targeted government purchases was also tried: a central government agency which would have been expanded in Stockholm, instead opened a new office in the textile town.

Employers' Reaction — Swedish Employers Federation (SAF)

We also learned first hand the reaction of the powerful Swedish Employers Federation to the measures used by the government to cope with economic dislocation. SAF took the position that despite the strict regulatory framework, ultimately the companies were free to decide, on economic grounds, whether or not to close an operation or permanently reduce their level of employment. Apart from labor court approval which may have to be obtained if the union does not consent, there are no legally binding constraints at present to prevent companies from implementing such decisions.

But even though the government can't say no to a company that wants to shut a plant, it often tries. Moreover, employers accept the fact that government can affect the timing of such decisions, by requiring pre-notification and stretching out the period of departure, to allow time for workers to find new jobs.

When asked how SAF felt about these and other measures ranging from wage subsidies to targeted government purchases to direct government ownership, we were told that Swedish employers understand they're "not living in a pure 'free enterprise' society." These measures were viewed as regrettable but necessary in a modern, complex, industrial society.

SAF even agreed, in principle, with the notion of trying to "jump" recessions, by such means as Sweden's inventory stockpiling program. In contrast to the unions, which favor selective, specific policies, SAF advocates "general" policies such as exchange rate adjustment and tax policy, which stabilize the overall economy without "distorting competition." The employers' federation is not in favor of government "bail outs" of individual firms.

When we asked whether this meant SAF objected to specific government measures such as those involved in restructuring the steel industry and rescuing Vikmanshyttan, we were told that even the SAF-backed government then in power believed "Sweden can never let go" of basic industries like steel and paper.

The general impression conveyed was that Swedish employers don't object strongly to the economic dislocation policies and programs currently in place. They are not anxious to dismantle them, even though they now have more direct influence on government than they did before September 1976.

As to the desirability of further legislation to cope with economic dislocation, SAF -- predictably enough -- wants to "hold the line." As our LO hosts perceptively observed, "employers have always complained that every new reform would do them in."

Summary

While the lessons of the Swedish experience are difficult to summarize, they are of sufficient importance to warrant the attempt. Between 4-5% of the Swedish labor force is engaged in some kind of government-sponsored labor market program, ranging from "sheltered workshops" (which employ some 40,000 handicapped workers), to retraining, subsidized private sector employment, and county or municipal public works jobs. The Swedes believe that general economic stimulus alone cannot provide jobs for this substantial group; selective means must be used. Were it not for the strenuous effort which these and other programs represent, Sweden's rate of unemployment probably would be about as high as ours.

In Sweden the percentage of the labor force in government programs is tending to increase regardless of the phase of business cycle. About 2-2.5% will persist permanently because of structural changes in the economy, and changes in the age structure of the population.

Protection of the job security of individual workers, and maintenance of the economic viability of communities, have extremely high priority. There are a wide range of policies and programs to protect these values in the face of economic dislocation and change. Increasingly, the emphasis of these programs is targeted employment preservation and job creation, with relatively less reliance being placed upon promotion of worker mobility.

Sweden's approach to these and other labor market problems is characterized by an extraordinary degree of coordination and planning. This contrasts sharply with the fragmented authority and inadequate coordination which have plagued labor market policy in the United States.

Although current legal requirements are viewed as inadequate by trade unionists, the Swedish planning effort is greatly facilitated by mandatory advance notice of impending dismissals. The period of notice is utilized to evaluate the applicability of employment preservation programs and to implement them if appropriate; to arrange retraining; to promote voluntary labor mobility; and to create new jobs in affected communities which are targeted to prospectively affected workers. In each of these areas, there is an impressive array of programs at the disposal of the government and the labor market board.

Swedish unions are also legally entitled to advance notice of impending employment cutbacks and full information concerning the reasons for a company's cutback decision. Every aspect of the decision must be negotiated with the union, before it is implemented.

While there are conflicting interpretations, it appears that none of this has fundamentally affected the decision-making power of corporations to reduce, close or relocate operations based on profit-and-loss criteria -- to the dismay of some trade union militants. Ordinarily the most the government can do, if a company is insistent on shutting down, is to affect the timing of that decision and to place certain very

important constraints on the way it is implemented. In the process, a much greater share of the "social costs" of the shutdown, which in the U.S. would be forced upon affected workers and communities, are absorbed by the corporation and the government in Sweden.

Moreover, Sweden apparently does not have the "runaway shop" phenomenon within the country, to anything like the extent that we know it in the U.S. This may be partly the result of the small size of the country, and its relatively homogeneous labor market and uniformly high rate of unionization. In addition, however, there is little doubt that such corporate relocation decisions would be deemed socially and politically unacceptable. Sweden has a program of national planning of land use. To check the depopulation of the northern regions and over-concentration in the Stockholm area, the government grants subsidies to companies if they locate in designated regions. There are no legal limits on corporate mobility, but all the corporate decision makers are located within a square mile area of Stockholm. Government officials discuss locational aspects of investments with corporate managers until a consensus is reached. Expansion in Stockholm is discouraged, but not prohibited. Foreign investment by Swedish-based multinationals has been growing rapidly in recent years, and the implications of this phenomenon for domestic employment and job security have been of mounting concern to Swedish trade unionists.[4] As a result, since 1975 it has been mandatory that Swedish corporations seeking to export financial capital for purposes of foreign investment must obtain prior approval from a government currency board, which carefully weighs the impact of the proposed investment on domestic employment. Under the new Codetermination Act, moreover, proposed foreign investments by Swedish corporations must be negotiated with the union before implementation. The union has no power to stop the foreign investment, but in many cases consensus is reached because the company agrees to maintain domestic employment. Foreign subsidiaries of Swedish companies employ 250,000 workers in manufacturing, which is equal to about 25% of manufacturing employment in Sweden.

Sweden also has legislation which protects workers in the event of employer bankruptcy. Employer contributions finance a wage guarantee program which pays wages owed to workers by bankrupt firms, including wages for the required dismissal notice period if notice has not been given.

The extraordinary emphasis on assuring the right of every individual to make a productive contribution has strongly differentiated Sweden's approach to the problems of economic dislocation and unemployment. In contrast to West Germany, the Swedes do not view early retirement or return migration of foreign workers as appropriate solutions to these problems. Even reduced work time, which is a separate goal in its own right as part of the long-term struggle to reduce the standard work week, is seen by the trade unions as an ill-advised response to recessionary pressures.

One important exception is the handling of overtime. American trade unionists have long been rankled by the corporate practice of continued scheduling of overtime during periods of heavy layoffs. The Swedish Job Security Law, which bars mass dismissals unless the employer can prove "lack of work" reportedly has put a stop to this

phenomenon in Sweden. An employer who is scheduling overtime for some workers cannot claim "lack of work" as grounds for laying other workers off.[5]

In conclusion, the Swedes have given full employment, protection of job security and preservation of community economic viability very high priorities on their social and economic policy agenda. They have developed a wide range of innovative and effective programs, and administered them in a remarkably coordinated and efficient manner, in pursuit of these goals. Swedish trade unionists are not fully satisfied with the progress made to date and would like to see further steps taken, something which they believe will have to await a Social Democratic victory in new elections. Targeted employment creation, in particular, is extremely difficult to accomplish and has not yet been demonstrated on a systematic or large-scale basis. It has been tried very successfully, however, in several communities, one of which we visited.

Although many progressive Swedes view their accomplishments to date as limited, it should be noted that the world economy has provided an extremely unfavorable environment since late 1973, when the OPEC oil embargo was imposed. That economic context strongly suggests that a much more positive assessment of Sweden's accomplishments would be appropriate. We have a great deal to learn from them.

NOTES

[1]Traditionally, the three LO represenatives made up of one each from LO headquarters, the building trades union, and the Metalworkers' Union -- Metall because it is the largest union, and the Building Workers' Union because construction plays so large a role in countercyclical policy. LO and the Building Workers Union are represented on all the country AMS boards, but Metall may be replaced by another union if other industries predominate in the area.

[2]The need for mandatory job listing was implicitly recognized in a program proposed by the Nixon Administration to assist Vietnam veterans.

[3]Our staunchly Social Democratic trade union hosts lost few opportunities to point out that there had been more nationalizations of basic industry in the first 18 months under the Conservative coalition than during the preceding 44 years of Social Democratic rule. In addition to steel, the shipbuilding industry -- long a mainstay of the economy and like steel, victim of a severe worldwide crisis -- is also undergoing "rationalization" under government ownership.

[4]As one representative of the Swedish Metalworkers put it, if their union organized foreign operations of Swedish-based corporations they deal with, Metall's biggest local would be in Sao Paulo, Brazil, not Sweden.

[5]Although beyond the scope of this report, it is of sufficient importance that it should be noted that overtime is reportedly subject to tight regulation in Sweden. The regulatory agency, interestingly enough, is the counterpart to our Occupational Safety & Health Administration, which, like AMS is made up of government, labor and business representatives. Corporations must seek specific approval from this agency to schedule more than 150 hours of overtime per year, and approval is by no means routine. Overtime in Swedish manufacturing averages under one-half hour per week.

VI. CONCLUDING SECTION

From Military to Civilian Economy: Issues and Options
- Seymour Melman

In Pursuit of Disarmament (Chapter 13 - Appraisals and Recommendations)
- Inga Thorsson

Seymour Melman's paper, "From Military to Civilian Economy: Issues and Options" highlights the different results in choosing from the two options that face industrial nations in the latter half of the twentieth century; between a predominantly military economy or a civilian economy.

Inga Thorsson provides detailed suggestions for the Swedish Government on how to establish an infrastructure and planning process for Economic Conversion with this chapter from "In Pursuit of Disarmament". Sweden is the only country that has initiated and completed such a study.

FROM MILITARY TO CIVILIAN ECONOMY: ISSUES AND OPTIONS

"From Military to Civilian Economy: Issues and Options," Seymour Melman. Occasional Papers Series No. 8 (1981), Center for the Study of Armament and Disarmament, California State University, Los Angeles.

INTRODUCTION

Despite the well-publicized dangers of a holocaust, a much more immediate and insidious threat to the world arises from the fact that the Nuclear Revolution has militarized politics and politicized military power. This has led to an unprecedented, global armaments race in which the production and transfer of conventional weapons is seen as a symbol of national pride, a palliative for sagging production and employment, and a goad to research and technological innovation. The major tool of diplomacy since the late 1960s, the economic pacesetter of the seventies, the trade in armaments today alone equals the world's yearly transfers of food. In the 1980s mankind seems to be well on its way to developing its first full-fledged, worldwide and, above all, permanent "war economy," to use Professor Melman's telling phrase.

To the historian, this development must appear both logical -- within the context of contemporary international relations — and inescapable, given the joint control over economy and armed force acquired by the nascent national state. By the same token, the historian has long been aware of the complex if ambivalent, connections and interrelationships between guns and butter. If Adam Smith, for instance, thought in his Wealth of Nations (1776) that firearms and armies could be "favorable both to the permanency and the extension of civilization," the Physiocrats were already pondering the impact of military spending on the creation of wealth and the economic security of the state. But both agreed and alerted the modern world to the fact that warfare and armaments are ultimately tied to a society's economic life and system.

In an age committed to not only warfare but welfare state, this linkage must give cause for particular concern. In the industrialized world, the manufacture and transfer of arms is tied to socio-economic motives on a scale unimaginable even in the heyday of Social Imperialism or in Hitler's prewar Germany. The private "merchants of death" of the early twentieth century have been replaced by governments which, routinely, produce and sell arms to pacify business and labor at home and win friends and influence peoples abroad. Hyped through promotion and spurred by competition, arms exports have become susbstantial components of the foreign trade of France and Israel as well as the United States and the Soviet Union, and are slated for a similar role by the economic planners of the EEC. At the same time, the demand for weapons has grown even faster, exceeding now by far the traditional requirements of the satellites of the superpowers. Heading the new clientele are third world regimes awash with oil revenues and at war amongst and within themselves, and fanatics of various persuasions prepared to hold society hostage to their private visions of the public good.

As of now, the arming of our world eludes control and its limits seem nowhere in sight. But as today's international "war economy" evolved out of an admixture of economic as well as political, military and technological factors, so it must eventually be resolved on equally broad pragmatic and theoretical terms. Seymour Melman, Professor of Industrial and Management Engineering at Columbia University and a consultant to both government and private industry here and abroad, has been a pioneer in arms reduction and one of its most pre-eminent spokesmen, for over twenty years. We are particularly pleased to bring the following papers, so representative of his prodigious output, to the attention of the wider audience they deserve.

--Udo Heyn

From Military to Civilian Economy: Issues & Options

I. INFLATION AND UNEMPLOYMENT AS PRODUCTS OF WAR ECONOMY: The Worker's Stake in Economic Conversion and Industrial Reconstruction

1. Inflation and Unemployment

Many Americans have come to view military economy as a source of income and jobs. But the effects of a long-enduring war economy include inflation and unemployment that more than offset, for all working people, the income and employment gains of those paid by the military.

For all people doing production work, the unemployment effect of war economy is destructive. When managers close factories, production employment ends. Meanwhile, firms can and do continue -- with production done in other countries. This can mean continued jobs for US financial, administrative, and sales staff, but no US-based work for engineers and production workers. Thus, the financial well-being of a firm does not necessarily include employment for US producers.

In conventional wisdom, inflation and unemployment are not supposed to happen at the same time. Why they appeared together in the US during the 1970s is a mystery to most people and also to most of our economists. For example, according to conservative economists, inflation is supposed to be an alternative to unemployment: but during the 1970s the US had both at the same time. Indeed, the inability of conservatives to explain events is part of a more general ideological crisis. Thus, among the Keynesian economists of the liberal center, the main economic alternatives are supposed to be stagnation or elevated government spending. Recently, the US has had both. On the left, among the theorists of monopoly capitalism, the main trade-off is understood to be stagnation or a war economy: and we have been experiencing both of those at the same time.

Across the range of main-stream economic doctrine there has been a common failing: omission of the nature and the effects of war economy from the assessment of economic development.

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2. What is a "War Economy?"

A war economy includes military production as a continuing and important activity, and the military products are counted as ordinary economic end-products. Thus, the military products are given a money value and are added to the prices of everything else to count up the national product, despite the uniqueness of military products from an economic standpoint. Military goods and services are economically nonproductive: They do not contribute to the standard of living; neither can they be used for producing anything else -- despite the political or military utility that may be assigned to them. They lack ordinary economic utility in the sense of usefulness, for consumption or for further production.(1)

The importance of the military economy is defined by the lion's share of the nation's prime production resources — technology and capital — that it uses up. In the US, for more than 25 years it has used three-quarters of the annual new Research and Development spending of the federal government. Also, every year since 1951 the Pentagon has received a block of money greater than the profits left over, after taxes, to the managements of all US corporations.(2) In an industrial society, the control over technology and capital strongly defines the economic scene. Thus the sustained pre-emption of the largest block of technology and capital resources on behalf of the non-productive economic growth of the military sphere defines the whole system as a war economy.(3)

The military economy sector spans 20,000 industrial firms in which a major part of production is on Pentagon order. Also, there are 100,000 sub-contractors. These firms have special qualities: unlike the typical civilian product firms, they maximize costs and offset this by maximizing subsidies from the federal government.(4)

How does a war economy operate to propel prices upward? I will identify seven kinds of effects from war economy that press toward the sharp price increases called inflation.(5)

First -- by pre-empting the lion's share of the nation's finite stock of technology and capital resources, the normal operation of the military economy has produced progressively greater difficulties in the civilian economy.(6) Thus, for over a century, one of the main strengths of the US industrial firms has been their ability to offset cost increases by redesign of products and production technology. The result was improved average productivity. US industrial firms once paid two to three times the hourly wage rates of similar firms in Western Europe while producing goods at competitive price and quality.

But the capability for offsetting cost increases by improved working methods and new equipment diminished as massive parts of the nation's technology and capital resources were channeled to the military. Firms that could no longer offset cost increases proceeded to pass along cost increases to price. As cost pass-along became the more common form of management behavior in place of cost minimizing then, after 1965, the intensity of price increase became inflationary.(7)

Second -- price is primarily a function of cost. Once the costs of producing and distributing something have been incurred, that establishes a base for market price around which an interaction of buyers and sellers can have some effect. But the costs of production are the starting point. Therefore, it is critical that the principal military industrial firms, which include the main manufacturing firms of the US industrial system, operate their military-servicing divisions on a cost-maximizing basis. This

means the establishment of internal managerial, engineering, and allied practices within the firms, specified by the Pentagon, that press relentlessly towards enlarging costs. No component of industrial cost is exempt from this process.(8) For example, by 1972 in all US manufacturing there were 42 administrative and related employees per 100 production workers. In the main Pentagon-servicing industries the ratio was 69 per 100.

Third -- as this process proceeds within the military economy, it infects civilian industry as well.(9) Administrative and production practices prescribed for military industry by the Pentagon are adopted by civilian divisions of the same firms (e.g. - why operate two accounting systems?). Equipment and raw materials for which lavish prices are paid by military users are often kindred to materials and equipment used in civilian firms. The cost-maximizing of the military economy becomes a model for cost and price increases for civilian operation as well.

As people transfer from military to civilian firms (or from military to civilian parts of the same firm) they carry with them the ways of performing their jobs that have been acceptable and well regarded in the service of the Pentagon. Thereby, work practices that are part of the cost-maximizing process get transferred to civilian type operations. The same occurs on the management side.

In firms partly devoted to serving the military there is a requirement for compliance with Pentagon regulations. Civilian divisions of the same firm can come under pressure to follow suit owing to differences between the firm's traditional requirements and the specifications of the Department of Defense. Typically, the Pentagon has a disproportionate influence, since it is an unusually large customer. Therefore its requirements carry considerably more weight than its portion of the firm's business may imply. By such means, cost-maximizing practices established directly under Pentagon regulations in the military-serving firms extend their cost and price increasing operation to the civilian economy.

Fourth -- by the mid 1960s the rate of productivity growth in the manufacturing industries of the United States reached an unprecedented low level. From 1965 to 1970 the average annual rate of increase of output per man hour in US industry was 2.1%. From 1970 to 1975, the rate dropped to 1.8%. These growth rates in productivity in the United States have been markedly lower than the performance of other industrial countries, as Table I shows. They are also the lowest rates of productivity growth ever recorded in the United States. Thereby the cost-offsetting capability of US industry is diminished. Cost increases that are not offset are passed along as higher price.

Fifth -- owing to large-scale military spending abroad for the operation of various wars and for the maintenance of more than 300 bases on foreign soil, the United States accumulated an immense negative balance of payments.(10) This meant simply that far more money was being paid out by Americans and by the US Government than was being paid back for all purposes to the United States. By 1971 the dollars accumulated outside the US amounted to about four times the size of the federal gold reserve. As a result, central bankers of various countries, and other holders of large quantities of dollars abroad, lost confidence in the ability of the US Government further to redeem dollars in gold. The US Government took emergency measures to save its gold reserve: it stopped the redemption of dollars in gold. The immediate consequence was fairly long enduring: the value of the US dollar dropped sharply in relation to other currencies, with the result that prices of all imported goods were driven up sharply.

Sixth — the US Government tried to offset the imbalance of payments by pressing the foreign sale of military material, and also of US commodities on a large scale. The latter had the further effect of forcing up US prices. (11) Thus, in 1971 the US Government arranged for the sale of the grain reserve of the United States to the Soviets. This did bring the US Treasury gold, or dollars or hard currency, but another effect was the rapid increase in the price of grain and the consequent escalation in the price of all grain-containing foodstuffs.

Seventh -- the people producing military goods and services are paid in dollars which they have used as claims on consumer and other goods. At the same time, however, they have not been contributing to the supply of these goods and services. Theoretically, no upward pressure on prices need have resulted if the government had withdrawn from circulation a sufficient quantity of money in the form of taxes to equal the value of the labor power, materials, and equipment used up for the military.

But that kind of response is ruled out by the conventional view of war economy which includes the idea that military goods and services have value (meaning price) just like any other goods and services, and should therefore be properly counted as part of the economic product of a society. This conventional reasoning is based on the practice of assigning money value to military products. It ignores the fact that these products, lacking in usefulness for consumption or for further production, are furthermore withdrawn from the market immediately upon being produced. Under these conditions the $1,800,000,000,000 paid out for producing military goods and services from 1946 to 1978 generated upward pressure on prices. A war economy is an inflation machine.

Table I. Rates of change of productivity in manufacturing

Country	Average Annual Percentage change in output per man hour 1965-70	1970-75
Belgium	6.8	8.2
Canada	3.5	3.0
France	6.6	3.4
Germany	5.3	5.4
Italy	5.1	6.0
Japan	14.2	5.4
Netherlands	8.5	5.8
Sweden	7.9	4.4
Switzerland	6.2	3.5
United Kingdom	3.6	3.0
United States	2.1	1.8

Source: US Department of Labor, Bureau of Labor Statistics, Productivity and the Economy, Bulletin 1710, (Washington, Government Printing Office, 1971), p.30; 1970-75 data by special communication from the Bureau of Labor Statistics.

These effects of war economy all reflect either the internal working of the military micro-economy or the cumulative effect of the concentrated use of technology and capital on economically non-productive output. Moreover, cost-price increasing mechanisms are separate from the supply-demand interactions of the market place. Indeed, the cost-price effects that are identified here have operated under conditions of much less-than-full use of the economy's resources, even in the presence of substantial unemployment. Evidently, unemployment is no tradeoff for the cost-price pressures of a war economy.

3. How does a war economy generate unemployment?

First -- the diversion of R&D and capital resources from civilian economy has caused industries to fall behind in product design, production methods, and productivity of labor and capital. Many important industries have become depleted -- unable to serve their market. There is not much in the US to compare with the high-speed mass transit systems of Japan, Germany, Sweden, or France. So imports are increasingly the vogue in steel, automobile, railroad equipment, consumer electronics, quality optics, shoes, textiles -- to name a few that head the list. When such US industries become incompetent relative to foreign-based firms, the result is the massive growth of imports to serve the US market. Opportunity for productive livelihood for Americans is reduced, whether the ownership of the facilities abroad is US or foreign.

In table II are shown estimates of employment foregone in the United States as a consequence of growing non-competitiveness. Employment foregone is estimated by applying to the total number of people employed in an industry the ratio of imports to the 'value of shipments' from the factories of each industry. 1964 is the last year before the military escalation in Vietnam, and 1972 is the last year for which the imports data are available.

In the radio and TV equipment industry, shoe manufacturing, clothing manufacturing, and the automobile industry, the effects are large enough to account for the important concentration of unemployment that has appeared in the cities and states that have long had many factories in these industries. The steel industry is the latest one to show sharp employment loss. From August to December 1977, 20,000 production worker, technician and administrative jobs were ended in the US steel industry.

The erosion of US employment opportunities in many industries has not been halted by the cheapening of the relative price of US labor, compared with foreign labor. That was one result of the decline in the value of the dollar in relation to other currencies from 1972 on. While certain industries (like equipment for power plants) have enjoyed renewed export markets as a result of that development, the employment decay in the largest number of industries shown here has been continuing. Once industrial investments are made abroad, for example, the plant, equipment, and the many investments in staffing factories become assets to the investors, and there is pressure on management to continue their use. This solidifies the employment loss in the US.

Second — as price inflation proceeds in the machinery producing industries, this has a special set of effects both for employment there and, indirectly as well, in the whole range of machinery-using industries. One of the root processes in a cost-minimizing industrial economy is the effect of the rise in the wages of labor, in greater degree than the prices of machinery. This makes the purchase of machinery a more attractive option to the cost-minimizing employer.(12) However, when machinery prices increase as much or more rapidly than the wages of labor, the purchase of new production equipment becomes an unattractive option to a cost-minimizing employer. This lowers employment levels within the machinery-producing industries.

Table II. Examples of jobs lost in depleted US industries because of non-competitiveness

U.S. Jobs replaced by imports

Industry	1964	1972
Men's & boy's suits & coats	800	7,100
Men's & boy's shirts & nightwear	4,000	18,200
Children's outwear	15,300	31,700
Wood products	4,800	9,800
Furniture & Fixtures	2,600	11,900
Rubber & plastic footwear	4,100	13,300
Men's & Women's footwear	6,500	32,600
Fine earthware food utensils	2,000	5,600
Pottery products	2,100	5,100
Fabricated metal products	2,900	7,200
Textile machinery	3,500	16,400
General industrial machinery	3,400	6,700
Typewriters & office machines	3,400	17,400

Calculating & accounting machines	1,300	5,300
Sewing machines	3,600	5,200
Current carrying wire devices	900	6,100
Radio & TV receivers	7,600	37,700
Radio & TV communication equipment	2,300	9,700
Semiconductors	700	11,800
Motor vehicles, bodies & parts	13,700	95,900
Aircraft equipment	3,500	10,400
Motorcycles, bicycles & parts	4,500	28,300
Measuring & controlling devices	400	7,800
Watches, clocks & watchcases	4,100	7,100
Games, toys, children's vehicles	2,900	6,600
Sporting & athletic goods	2,500	8,100

Estimating method: (Imports = Value of shipments from US factories) X Total employees of the Industry = Estimate of US employment lost owing to imports. Only industries with an estimated job loss of 5,000 or more by 1972 were included here. Prepared with the assistance of Earl Yang.

But the consequences of making new equipment economically unattractive affect the rest of the industrial system as well. For as new machinery is not purchased, and as the capital stock of manufacturing industry ages, the result is a lessened rate of productivity growth, less ability to offset cost increases, and consequent growth of price non-competitiveness. Thereby, unemployment effects are multiplied through the industrial system.

Crucial evidence on the extent of this development comes from the McGraw-Hill Company's 1973 Inventory of Machine Tools in US industry. They reported on 29 October, 1973 (American Machinist, page 143) that by 1973 67% of machine tools in use in the US industry were ten years old or over. This was the oldest stock of metal working machinery in any industrial country. The US rate of productivity growth was depressed, as I showed above, and led to growing non-competitiveness and unemployment in the manufacturing industries.

Third -- as holders of capital seeking opportunities for investment they discover that civilian economic growth proceeds more rapidly in countries that do not have a permanent war economy. During the 1960s US investors discovered better prospects abroad, especially in Western Europe and in Canada. Accordingly, about $47,000,000,000 of direct foreign investment was carried out by Americans during the 1960s. This accounted for the equivalent transfer abroad of 3 to 4 million manufacturing and allied jobs.(13)

Fourth -- in conventional wisdom one way to diminish inflation is to retard investment and other spending by raising the interest rate, thereby making it more costly to borrow money. But as this is done, and as new investment and other economic activity is diminished, the result is a reduction in employment opportunity. (Also, such strategies did not eliminate inflation during the 1970s).

Fifth -- spending for military industry products characteristically generates less direct employment than do many kinds of civilian expenditure. Dr. Roger Bezdek, an economist at the Energy Resource and Development Administration, has calculated the direct job effect from spending $1,000,000,000 in each of the indicated activities. His results are set out in Table III.

Military production, espcially of the more technically ornate sort, is capital-intensive, including major charges for the use of specialized and costly research, testing, and manufacturing facilities. Also, military industry operates with lavish administrative overhead facilities and salaries. A net result of high capital and manpower costs in military economy is less direct employment, compared with civilian economy, per dollar spent.

Sixth -- military work uses up resources which could have been applied to economic-productive purposes. Bruce Russet of Yale University has estimated the average reduction in major economic sectors that is associated with spending on military economy.(14) Thus, for the period 1939-1968 an average increase of one dollar in military spending was associated with reduction in the following areas:

-Personal consumption (durable, non-durable goods and services)-42 cents less.

-Fixed investment (residential and non-residential structures and producers' durable equipment)-29 cents less.

Table III. Estimates of employment generated by $1 billion federal spending in various activities

Program	Jobs
B-1 Bomber	58,000
Army Corps of Engineers	69,000
Law Enforcement	75,000
Sanitation	78,000
Mass Transit Construction	83,000
Public Housing	84,000
Highway Construction	84,000
Conservation and Recreation	88,000
Welfare Payments	99,000
Social Security	108,000
Education	118,000

Source: G. Adams, The B-1 Bomber: An Analysis of Its Strategic Utility, Cost, Constituency, and Economic Impact, Report of the Council on Economic Priorities, 1976, page 21.

-Exports - 9 cents less.

-Imports - 2 cents less.

-Federal civil purchases - 4 cents less.

-State and local government consumption - 12 cents less.

Military spending removes something from each of these economic areas, with the main effects showing up in less personal consumption and less fixed investment.

Marion Anderson (1975) has estimated the net employment effect associated with the classes of economic activity foregone owing to military spending. Her estimate of the negative employment impact of military spending shows an annual average (1968-1972) of 844,000 jobs foregone.

The developing fiscal crisis in many US cities is a derived effect of the transfer of capital and purchasing power, via federal taxes and spending, to the centers of military bases and industry. So the cities of the northeast and the midwest have been hardest hit by the cumulative effect of money withdrawn to serve the military economy.(15)

The combined direct effects of capital invested abroad during the 1960 decade and the employment that is foregone in civilian economy owing to military spending has been in the range of not less than 3,500,000 to 4,500,000 jobs foregone in recent years. If one assumed a modest multiplier effect, then a doubling of these estimates is in order. This brings the civilian unemployment effect associated with the sustained military economy of the US to the range of 7,000,000 to 9,000,000 jobs.

Seventh — there is more industrial unemployment to come. It is possible to anticipate the continuation of the depletion process and to forecast at least a part of the location and the magnitude of its effects. One device for accomplishing this is through analysis of an unusual body of data made available to the public by the initiative of Dr. Michael Boretsky, a senior economic analyst at the US Department of Commerce. The US Bureau of the Census, which prepares the Census of Manufactures, calculated for each factory ('establishment') of selected industries the 'value added by manufacture' per employee. This is a productivity measure where the output is represented by the money value of shipments minus purchased materials, containers, and power. The factories of each industry were then ranked according to their productivity level. The Bureau then calculated the ratio between the average productivity of the top quartile of factories in each industry and the average productivity for the industry. These figures appear in the first column of Table IV. For example, for 1967, in the Blast Furnaces and Steel Mills (industry No. 3312) the 1.5 figure means that the top quartile of factories of that industry, in terms of productivity, were 1.5 times as efficient as the average for the industry.

Similarly, reading across and to the right, the next column shows the ratio of the top quartile to the lowest quartile of that industry. By 1967 the factories in the top quartile of the steel industry were 2.3 times as productive as the lowest quartile.

Clearly, the lowest quartile of the iron and steel and other industries is the least competent part in terms of cost and price competitiveness. The factories of this lowest quartile in each industry are the first to go when firms decide to shut down non-competitive divisions. Thus, the factories that were shut down in seven states from August to November 1977 in the iron and steel industry were surely of that class.

Table IV. Disparities in the level of productivity within selected US manufacturing industries

SIC code	Industry	Ratio of value-added/ employee in 25% highest productivity establish-ments (plants) to the average of the in-dustry 1967	Ratio of value-added/ employee in 25% highest productivity establish-ments, to the value-added/ employee in 25% worst performing establishments 1967	Total employees (000)	Estimated no. employees in 25% lowest produc-tivity estab-lishments (25% of Total employees
2211	Broad women fabric mills, cotton.....	1.4	1.9	108.5('75)	27,100
2621	Paper mills, except building paper mills.....	1.4	2.2	130.4	32,600
2812	Alkalies & chlorine.....	2.3	3.2	13.7	3,400
2821	Plastics materials and resin	1.8	3.6	57.7	14,400
2911	Petroleum refining.....	1.5	4.8	102.9	25,700
3211	Flat glass.....	1.2	2.4	21.5	5,100
3312	Blast furnaces & steel mills	1.5	2.3	518.0	129,500
3323	Steel foundries.....	1.5	1.8	53.3('75)	13,300
3334	Primary products of aluminum	1.1	1.7	25.3('75)	6,300
3391	Iron & steel forgings.....	1.4	1.9	39.4	9,800
3461	Metal stampings.....	1.3	1.7	101.1	25,200
3519	Internal combustion engines, n.e.c.....	1.6	2.3	80.8	20,200
3522	Farm machinery & equipment	1.4	2.1	130.8('75)	32,700
3541	Machine tools, metal cutting	1.3	1.9	62.8	15,700
3561	Pumps & compressors.....	1.6	2.1	63.9	13,500
3621	Motors & generators.....	1.4	1.8	100.2	25,000
3632	Household refrigerators & freezers.....	1.4	1.6	32.7	8,200
3717	Motor vehicles & parts.....	1.4	2.5	889.0('73)	222,200
3722	Aircraft engines & parts....	1.4	1.8	108.0('75)	27,000
	Average	1.5	2.4	Total	656,900

Sources: Productivity data, M. Boretsky, US Technology: Trends and Policy Issues, US Dept. of Commerce, Oct. 1973. Based on special tabulations of census schedules in regular census years by the Dept. of Commerce, Bureau of the Census; U.S. Bureau of the Census, Annual Survey of Manufactures, for 1974 and 1975, Motor Vehicles, 1973, from US Statistical Abstract for 1977, p.773.

Following this reasoning, I have reckoned that the lowest quartile of factories in each of the identified industries is the section of greatest weakness and the first likely to suffer unemployment from the discovery by management that divisions of their firm are no longer cost and price competitive. Accordingly, I show on the right hand of Table IV the total number of employees in each industry as of 1974-75. In the last column, at the right, I show the numbers comprising 25% of each industry's workers, managers, and technicians. These groups in the least productive quartile of each industry will very likely be the first to be rendered unemployed as the process of industrial depletion continues in the United States.

By this reckoning, 656,000 employees will be in the first wave of job loss in these industries during the next period. There has been no attempt just yet to estimate the speed of these processes within each industry. But the record of the 1960s and 1970s shows that the sort of destruction of opportunity for livelihood that is defined here can be anticipated within the next five to ten years.

These effects of a durable war economy in producing inflation and unemployment are destructive of the basic requirement of every economy: that it organize people to perform the useful work that is indispensable for continued life. A community must produce in order to live. As production is foregone in favor of money-making by other means, then opportunity for livelihood is closed off for people in the productive occupations. That is why workers have a special stake in competent planning for economic conversion to a civilian alternative to military economy.

4. Economic conversion

Two kinds of conversion problems are discussed here. The first one is conversion from military to civilian economy. The second type of conversion involves reconstruction of civilian industries that have become depleted.

There are common features to both kinds of conversion in that they involve internal reconstruction of enterprises or parts of enterprises not competent to serve a civilian market. The military enterprise usually lacks the managerial and engineering capabilities for designing, producing, and marketing outside of the military sphere. In the depleted civilian industry, however, the central requirement is typically the redesign and reconstruction of production systems needed to achieve major improvements in productivity of labor and productivity of capital in order to be able to produce at acceptable quality and price.

Both types of conversion are best executed when authority and responsibility are vested in the management, non-management employees and the surrounding community. All these parties have a major stake in the success or failure of the enterprises that are involved.

First, in the conversion process from military to civilian economy, advance planning on a decentralized basis to create capability for such conversion is the crucial requirement. The following, briefly stated, are central requirements for a conversion planning strategy: first, planning new capital outlays; second, detailed conversion planning at individual factories and bases; third, guarantees to individual employees; and fourth, the formation of a National Economic Conversion Commission.(16) This is an outline for federal legislation.

New capital outlays for new markets and new jobs

In the Report of the Council of Economic Advisors to the President in 1969, an appendix on the economy after Vietnam detailed an agenda of public responsibility activities that deserved continuing financing by the federal government. The list included the familiar 'neglected priorities' and amounted to $39.7 billion per year. In 1977 values this would amount to over $50 billion per year. This list is reproduced in Table V.

New capital outlays of this size, sustained and planned in advance, are equivalent to a major list of new markets for which industrial firms can bid and in relation to which many people could plan new job opportunities. The 1969 agenda can be updated and the civilian investment planning can be extended to include not only federal, but also state, county, city enterprise, and regional (including ex-military base) planning.

Table V. Illustrative new programs or major expansions of existing federal civilian programs, fiscal year 1972 (derived from proposals of task forces and study groups)

Program	Hypothetical expenditures (billions of dollars)
Total expenditures	39.7
Education	7.0
Preschool	1.0
Elementary and Secondary	2.5
Higher	3.0
Vocational	.5
Health	3.8
Kiddie-care	.5
Medicare for disabled	1.8
Comprehensive health centers	1.0
Hospital construction and modernization	.5
Nutrition	1.0
Community service programs	.8
Jobs and manpower	2.5
Public jobs	1.8
Manpower Development Training Act	.5
Employment service	.2
Social security and income support	9.5
Unemployment insurance	2.0
Public Assistance	4.0
Social security improvements	3.5
Veterans	.3
Economic, area, and other special development programs	2.2
Entrepreneurial aid	.5
Area redevelopment	.5
Rural development	1.0
Indian assistance	.2

Crime, deliquency, and riots	1.0
Violence and riot prevention	.1
Safe Streets programs	.3
Rehabilitation of offenders and deliquents	.3
Prevention of deliquency and crime by special measures for deliquency-prone youth	.3
Quality of environment	1.7
Air pollution prevention and control	.1
Public water supply construction programs	.3
Water pollution control and sewage treatment	1.0
Solid waste disposal	.1
Natural beautification, environmental protection, and recreational development	.2
Natural resource development and utilization	1.4
Land and forest conservation	.2
Water resources and related programs	.5
Mineral and energy (excluding hydro-electric) development	.2
Urban development	5.5
New cities	.5
Land acquisition and financial planning (Suburban)	.5
Urban mass transportation	.5
Model cities	2.0
Other urban facilities and renewal	2.0
Transportation	1.0
Airway and airport modernization	.4
Rapid interurban ground transit	.1
Modernization of merchant marine	.2
Motor vehicle and transportation safety research and safety grants	.3
Science and space exploration	1.0
Post-Apollo space program	.5
Scientific research in oceanography communications, social and behavioral sciences, and natural sciences	.5
Foreign economic aid	1.0

Source: 'Report to the President' from the Cabinet Coordinating Committee on Economic Planning for the End of Vietnam Hostilities, in Economic Report of the President, transmitted to the Congress January 1969. The report includes an explanation of the content of the program categories.

When realistic plans for major capital outlays to repair the long depletion of the US economy are prepared and published by all these parties, the total activity will probably far exceed the capacity of the US economy. The existence of such investment plans will give confidence in the workability of economic futures in place of those to be obtained from military industry and military bases. The translation from new investment to jobs can be reasonably estimated: assuming $12,000 as the average cost of a man-year, then $50 billion generates, directly, 4,500,000 jobs. To allow conservatively for multiplier effects, double that figure.

Planning for conversion

To be effective, conversion planning for self-sustaining civilian work must be done well in advance, and by the people directly involved. Not less than a year is required for planning the detailed changes in machines, tools, materials, skills, production organization and marketing -- for producing and selling a new product. The preparation of such plans for changing over the work forces, equipment, and facilities at each industrial plant and military base unit with 25 or more employees should be made a requirement for every industrial contracting firm and military base administration. The cost of planning should be charged to the military contract, or base operating budget, at the rate of not more than $50 per employee.

The conversion planning operations should be the responsibility of a tripartite committee at each plant and base: one-third named by management; one third named by the employees; one third named by the local community. Such committees will have the built-in strength of self-interest. Localizing authority and responsibility for the planning operations will give such groups serious capability. The participation of the people directly involved will render superfluous the establishment of any central organizations to oversee such planning. A centralized effort for such purposes would, in any event, be both costly and unwieldy. Local conversion plans should be up-dated every two years.

Occupational conversion

It is to be expected that even the most conscientious and imaginative conversion planning efforts at many military industry and military base sites will involve dislocations for parts of the work force. Some military-serving firms employ three times the proportion of engineers compared with civilian firms. Many military bases are so specialized, and their locations so remote, that it may be difficult to convert them to viable civilian operations.

Guarantees to individual employees

Experience since 1960 implies limited conversion capability for many military firms and base administrations. This is owing to the difficulty, especially among administrators and engineers, in adjusting away from the cost-and-subsidy-maximizing procedures that have become their normal way of professional life. Therefore, prudence requires assurance for economic backstopping of individual employees at all levels. Three forms of support are important:

Income guarantees. Two year guarantees by the federal government of income based upon the last year's earnings: 90% of first $20,000 per year; 50% of the next $5,000 per year. These amounts should be inclusive of all other employer, union, government, and other payments (unemployment insurance, separation allowances, etc.). The income guarantee requires parallel registration with the state employment service.

Job retraining. Administrative and technical employees are prime candidates for occupational retraining as their skills have been typically 'spoiled' for civilian work. The skills of blue-collar workers, by contrast, have not been molded into a special military industry cast. Therefore they should require little retraining.

Relocation allowances. New civilian employment opportunities outside of military industry areas will require family relocations. A schedule of allowances for this purpose should be built into the law.

These guarantees to individual employees can be readily administered through the network of existing State Employment Offices. No new organizations need to be set up for this function.

A National Economic Conversion Commission

Such a Commission is needed to encourage the economic planning outlined above, and to oversee blueprint-readiness for the capital outlays scheduled by various government departments. The Commission should prepare and issue concise manuals to guide industrial and military base conversion committees in their work (e.g. the main questions that must be asked; where to find technical and economic planning specialists to assist local committees). The Commission should also convene regional and national meetings and issue bulletins for trading experience and linking local efforts in these processes. None of this implies supervision over the local conversion committees. To intervene in that fashion would contradict the principle and the gains from localized responsibility and authority. The members of this Board should include the Secretary of Commerce (Chairman) and representatives of other appropriate federal departments, plus five management and five labor members.

People who are dependent for their livelihood on military spending are understandably wary of steps, however meritorious on other grounds, that would reduce Pentagon budgets. Congressmen and others who are called upon to ensure Pentagon money for bases and industrial contracts in their districts and states are understandably wary of moves to reduce Pentagon budgets, even when these seem to be based on strong considerations of national security. Fear of job loss has become a major barrier even to negotiated mutual reversal of the arms race as an option for improving American security.

At the same time, the state management in the White House and Pentagon that controls the military economy has opposed planned capability for conversion from military to civilian economy.(17) Their fear is that if people had an opportunity outside of military economy, they might choose to take it.

5. Reconstruction of depleted industries

Two types of industrial depletion can be identified. The first is the total disappearance of an industry. That means that the product is no longer produced; production facilities do not exist; and the workers, engineers, and managers practiced in that industry have been scattered or retired. An example of this disappearance in the US is the electric trolley car industry which last produced one of these vehicles in 1952. Thereafter the facilities were dismantled and the people scattered.

In this circumstance the re-establishment of the industry means starting afresh without specialized talent and facilities. For this purpose it may be vitally important to draw upon management and engineering talent in other countries where the industry

operates effectively (e.g. Germany, Japan). Thus, a fresh start in the US would be speeded and facilitated by the availability of an industrial coaching team brought in from the outside and available for, say, two years to help train up a new US industrial cadre. In the case of the disappeared industry it will also be necessary to go outside the United States for specialized equipment whose production and design have long ceased to be available in this country.

A second type of reconstruction problem occurs where a part of a depleted industry remains and is at least close to being economically viable. For example, the most productive factories in the shoe industry in the US are apparently able to serve the market satisfactorily in the face of foreign competition. If you refer back to Table IV on the productivity differences within industries, then it should be clear that the top quartile, or the top half of each listed (and similar) industry is probably able to make it economically.

For these industries the problem is: how to induce major improvements in productivity so as to bring the bottom half or the bottom three-quarters of an industry's factories up to the level of labor and capital productivity already achieved by the most productive top quartile of factories. From one standpoint this is a simplified problem. The target levels of productivity are already attained. Matching them requires no more innovation than utilizing the technology and organization technique that is already available and demonstrated. Little new knowledge is required. No long delay for fresh research and development need be part of the reconstruction time-table.

Nevertheless, sharp improvements in productivity require major alteration, not only in plant and equipment, but also in the skills, working habits, and standards of managers, engineers and workers. A thoroughgoing upgrading of occupational skills is required. In addition, new occupations must often be added, especially those like industrial engineers with their major responsibility for cost minimizing and for driving the productivity process, both at unit operations and in manufacturing systems as a whole.

The occupational upheavals that are an inevitable part of major productivity improvement are best dealt with when the main concerned groups have a hand in the decision processes on productivity improvement. That is a fundamental merit of the tripartite conversion committee strategy as recommended in this discussion for conversion from military to civilian economy, as well as for the reconstruction of totally or partially depleted industries and enterprises.

These advantages of broad participation in planning and executing conversion operations cannot be obtained simply by strengthening managerial control. I appreciate that there is a considerable belief system whose instruction is that intensified control of a hierarchical sort is necessarily 'better' for efficiency. Without delving into the details of this core problem, let it suffice here to indicate that virtually every inquiry into these matters supports the proposition that there is no average linkage between increased intensity or cost of managing and increase in productivity.

The tripartite committee scheme for governing industrial conversion operations has the merit of bringing together the main parties with a stake in these operations. There is abundant evidence indicating that unilateral, as against multi-party, control of the sort recommended here leads to the ordinary sorts of friction, suspicion, waste of time, and resources associated with priority attention to struggles for power rather than to cooperation in production.

It is not assumed here that occupational class differences are erased by devices like a tripartite committee. It is assumed, however, that the regular operation of such an institution facilitates speedy confrontation of differences and affords an arena for resolving problems on mutually acceptable terms.

The economic reconstruction of depleted industries probably requires an institutional innovation of financing. Capital must be made available for such operations in ways consistent with the method of tripartite local control. A financing mechanism must be designed whereby each of the three main parties at interest in a reconstructed enterprise can participate with, say, one third of the capital fund from each party. The management could raise its share from its own resources or from the ordinary capital market. Employees have to devise ways of using the very large pension fund reserves for such investments. The community share could come from the local treasury or through means of financing available to local governments.

The effect of such joint financing necessarily includes joint attention to becoming successful. The effect would also include close attention to being efficient, the better to succeed in the marketplace. All this is far removed from the conditions of permanent government subsidies and their effect of inducing a subsidy-maximizing rather than a cost-minimizing mode of decision making.

The traditional economic and bureaucratic pressures for maintaining and enlarging military spending as a primary strategy for economic development are now in collision with the economic self-interest of a much wider population that is damaged by the unemployment and inflation effects of a permanent war economy. Thus institutions like trade unions, and the largest number of their members who depend on the viability of a US civilian economy, have a growing economic stake in moving from military to civilian economy. In the absence of an economic conversion or economic reconstruction option, they have seen no viable alternative to supporting -- or, at the least, participating in -- the military economy. The prospect of legislating economic conversion and reconstruction capability introduces new options. It would give workers, engineers, and others who do production work a new basis for a viable economic future.

NOTES

1. See discussion in Melman 1976, especially pp. 235-237.

2. Melman 1974, ch. 4, 5.

3. Note the contrast with the more conventional way of judging the importance of the military economy: comparing military spending with total Gross National Product. Since the latter includes the value added of all economic transactions, the military proportion of that total can be small or can decline even while military production keeps using up the largest shares of capital and new technology, thereby depleting the production capability of civilian industry.

4. Melman 1974, ch. 2.

5. To some economists every price increase is inflation. Other understandings of inflation include: price increases that reduce the purchasing power of a wage or salary; price increases that effect a redistribution of income in favor of the rich; or price increases in excess of the savings-bank interest rate.

6. Melman 1974, chapters 4 and 5; see also Melman 1965; Holloman & A. Harger 1971.

7. This mechanism for latter-day US price inflation has been given statistical expression in a study by Byong Ho at the Department of Industrial & Management Engineering, Columbia University, entitled: Inflation Under Cost Pass-Along Management, 1978. More than 90% of price variation since 1965 is accounted for in this fashion.

8. See the details on the functioning of military industry firms in Fox 1974.

9. See Fitzgerald 1972, pp. 18, 19. Other parts of this book also contain sections that are relevant to transfer of military economy methods to civilian firms.

10. Melman 1974, pp. 110 ff.

11. Melman 1974, p. 113.

12. Melman 1956.

13. Melman 1974, p. 97-104; P.G. Musgrave, 'Direct Investment Abroad and the Multinationals; Effects on the United States Economy', Subcommittee on Multinational Corporations, Committee on Foreign Relations, United States Senate, US Government Printing Office, August 1975, p. 14.

14. Russett 1970, pp. 140-141.

15. 'Federal Spending: The North's Loss is the Sunbelt's Gain', National Journal, June 26, 1976; J.R. Anderson, 'The Balance of Military Payments Among States and Regions,' in Melman, ed., 1971.

16. Melman 1974, ch. 8.

17. Melman 1974, ch. 10.

However, as far as I can see, the present trend of military expansion unfolding before our eyes will not serve peace. Rather, this trend is pregnant with the dangers of multiple outbreaks of local conflicts capable of leading to a nuclear war and to the economic collapse of the entire world.

– *Tokuma Utsunomiya*

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"Appraisals and Recommendations," (Chapter 13) in In Pursuit of Disarmament - Conversion from Military to Civil Production in Sweden, a Report by the Special Expert Inga Thorsson, Vol. 1B, 1984.

Background

Sweden and the other Nordic countries proposed in 1977 that the United Nations examine the relationship between disarmament and development. One important purpose of the UN study which grew out of this proposal was to expand the awareness in Member States of the consequences of the arms race and of the possibilities that exist for reallocating resources should the superpowers begin to disarm.

Following the report by the Group of Governmental Experts in 1981, Member States were urged at the 37th Session of the General Assembly in 1982 to adopt measures in line with the Group's recommendations. Governments were also requested to inform the UN of measures undertaken at the national level to follow up the 1981 UN report.

The national measures envisaged by the UN recommendations were of two sorts:

* first, description and analysis of the resources devoted to the military sector and of the economic and social consequences of the current pattern of resource allocation,

* second, decisions concerning preparations and planning for conversion, that is, the transfer of human and material resources from the military to the civil sector and the simultaneous increase in development co-operation with the Third World.

The national studies would thus complement the 1981 UN report by providing both the peoples of Member States and the United Nations with information on the use of human and material resources for military purposes as well as on the socio-economic effects of this resource use. Each country was also requested to provide information on its involvement in the arms trade.

The present Swedish study, which was carried out between September 1983 and July 1984, can be seen as a first stage in Sweden's fulfilment of the UN recommendations. This report describes the nature and extent of Swedish efforts as well as the interaction between the economy as a whole and the defence sector. Topics such as the characteristics of the defence industry and the differences between military and civil technology are discussed in detail. In addition, the possibility of gradually reallocating resources currently at the disposal of the defence sector is examined. Finally this report suggests various measures which the Government could decide to undertake in order to prepare and plan for the transfer of resources released from the military sector to civil purposes as a second stage of Sweden's fulfilment of the UN recommendations.

The International Setting

The current global political situation does not particularly encourage Governments to adhere to the UN recommendations. At a time when the arms race is intensifying and reaching absurd proportions, arguments in favour of disarmament may seem utopian. In a period when growing automation has contributed to rising unemployment in most industrialized countries, plans which would reduce the size of the defence sector may also seem unrealistic and inopportune.

Viewed from a wider, global perspective, however, there are persuasive reasons to reflect more closely upon the role played by the armament process in today's society and its likely future effects. It is particularly important to ponder two aspects:

* first, the implications of the arms build-up for the security of nations and individual human beings,

* second, the effect of the armament process on employment, economic stability and socio-economic development.

The assumption that security can be reinforced by the acquisition of a greater number of more sophisticated weapons has increasingly begun to be questioned in both East and West. Armaments have become an onerous economic burden, not least for the superpowers. The fulfilment of important social and economic needs has been sacrificed to the arms race. Military expenditures are an important component of the large and growing budget deficits which in effect mortgage the disposable resources of future generations. Deficits have also contributed to high interest rates which affect the debtor countries of the Third World particularly severely.

At the same time, East-West disarmament talks and North-South negotiations for a more just economic world order have become deadlocked. The world clearly stands at a crossroads. The global situation may deteriorate even more and lead to confrontation and chaos. Alternatively, an attempt can be made to build a more secure and just world, where greater trust and co-operation would replace the rivalry and the use of gun-boat diplomacy which currently prevail.

In addition to the 1981 Expert Group report and earlier UN studies on the effects of the arms race a series of international studies carried out in recent years has discussed the problems threatening the world. Included are the reports from the Brandt and the Palme Commissions which have analyzed these global dangers and recommended specific measures designed to improve the situation.

Even if the prospects for the future do not inspire much hope, it should not be assumed that circumstances will never change for the better. A positive factor is that in many countries there is a strong and growing body of public opinion in favour of disarmament, which objects to the fact that humanity is held hostage to the threat of nuclear war. It is also noteworthy that a growing number of political leaders throughout the world are beginning to understand that the security and well-being of their populations are more likely to be guaranteed by a reduction rather than an increase in armaments. The economic cost of the arms race is considered all too burdensome given the level of security that results.

Up to 100 million people are dependent for their livelihood on the defence sector. Disarmament must not be seen as a threat to the future of these individuals. By emphasizing civil projects and by expanding the service sector, a large number of people will benefit and new jobs will be created as military orders decrease. Reducing their military expenditures would enable the industrialized countries to allocate more resources to the Third World. Such an increase of transfers would enhance the awareness of the interaction between disarmament, security and development. It ought to be in the enlightened self-interest of all countries to implement a policy which would result in more rational utilization of resources. A corollary to such a policy would be to comply with the UN recommendations. Governments would thus publicly report their use of resources for military purposes and prepare and plan for the conversion of these resources to civil purposes in the pursuit of disarmament.

General Considerations

The background to this report is explained in detail in the study's terms of reference. There it is pointed out that the UN report was to form the basis for decisions on concrete measures for reallocating resources used for military purposes to productive use in the civil sector, as well as for channelling some of these resources to the developing countries.

The same objectives can be ascribed to the national reports produced by Member States outlining the measures they plan to adopt to comply with the UN recommendations.

Sweden has three primary reasons for complying with the UN recommendations. These are related to:

* foreign policy,
* industrial and employment policies, and
* business considerations.

Sweden resolutely protects its national independence and its territorial integrity. Sweden also attempts in various ways to promote détente and disarmament in order to enhance peaceful development and to create the conditions necessary for intensified co-operation among countries. The initiation of conversion planning in order to be prepared for a situation characterized by international disarmament would be in line with Sweden's disarmament policy. A decision in this direction would not only be a logical extension of Swedish activity in the United Nations. It would also be an expression of Sweden's conviction that it is both politically important and economically advantageous to reduce the defence industry's dependence on military orders.

Given the Special Expert's view that disarmament must not be allowed to increase unemployment, it is necessary that the process of adapting the economy to reductions in defense outlays begin now. From the point of view both of the overall health of Swedish industry and of employment, a diversification into the civil sector is clearly warranted. If the current trend toward greater industrial automation continues, all resources - including those in the defence-industrial sector - must be used in a productive manner in order to maintain employment.

Reducing the dependence of the defence industry on military orders is a long-term proposition. If international disarmament and a subsequent Swedish disarmament is not to result in increased unemployment, the defence industry must continually expand its capacity to produce for the civil market. Resources and knowledge currently used for military-related purposes ought increasingly to be directed to civil projects in both the defence and the civil sectors. The Government has a special responsibility to see that such diversification occurs.

Defence producers should consider it to their own advantage to co-operate with the Government in planning and co-ordinating the conversion process. Many companies are currently finding it difficult to adapt to lower levels of procurement on the part of the Swedish armed forces without financial assistance. From the point of view of long-term business strategy, it seems both incorrect and imprudent to attempt to compensate for reduced domestic defence procurement by expanding exports. It is very unlikely that the current Swedish restrictions on war-material exports will be relaxed. At the same time, however, it is very likely that international competition for export markets will intensify in the coming years. If companies currently producing military equipment are to remain viable, they must diversify, not export. Faced with declining defence orders and the likelihood that this trend will continue, both corporate management and the unions should presumably be interested in participating in Government-supported and co-ordinated programmes designed to promote a more productive allocation of resources.

Conclusions

With this general background in mind, some of the conclusions reached by the Special Expert will be summarized here.

* The financial resources abosrbed by the Swedish defense sector exceed the annual budget allocation for total defence. In round numbers, the present appropriation for military defence is 20 billion SEK ($2.5 billion) while just under 5 billion SEK ($400 million) are assigned to the other components of total defence. The largest extra-budgetary categories which must be included in any calculation of the social cost of the Swedish defence sector are first the reduction in the growth rate which can be attributed to defence expenditures, second the production losses which result from the operation of the conscript system, and third the defence-related portion of subsidies to agriculture and other sectors of the economy.

* Sweden possesses a domestic defence industry which is as broad and as technologically advanced as the defence industries of other larger Western European countries. This industrial capacity enables the Swedish armed forces to give a special, Swedish profile to defence materiel. The ability to do this both underlines Sweden's determination to defend itself and reduces the effectiveness against Sweden of the weapons and countermeasures employed by NATO and the WTO. A study carried out within the project has shown that in Sweden the defence industry has on average a higher research intensity than comparable firms which produce entirely for the civil market. Over 20 per cent of publicly funded research in Sweden is at present defence-related.

* This disarmament involves a progressive reduction in military efforts over a 25-year period (1990 to 2015), which implies a gradual cut in the Swedish military-defence budget from 20 to 10 billion SEK in current prices ($2.5 billion to 1.25 billion). This would have considerable impact on both the wartime and the peacetime organizations. A large number of units would have to be demobilized. It would be necessary to cut the size of the armed forces by about 870 full-time employees per year. It should be pointed out, however, that this reduction in personnel is somewhat smaller than current or already planned reductions due to rationalization. It is military personnel who would be most affected by these changes because the opportunities for transferring personnel to new jobs within the armed forces would be sharply limited during a period of disarmament.

* The number of defence-industry employees would in all likelihood be reduced to an even greater extent. Between 1990 and 2015 about two-thirds (14,000 workers) of those currently employed in the production of defence equipment would have to find jobs in the civil sector. The ability to convert production successfully will vary from company to company. Some companies are heavily specialized in military production while others have already established an expanding civil-sector manufacturing base alongside their military capability. An emphasis on high-technology products and a low level of dependence on military-related exports will presumably facilitate the conversion process.

* There is reason to believe that the effects of disarmament would be manageable. A precondition is, however, that defence-sector conversion (including the defence industry) be well planned and carried out gradually. Government, defence producers and unions should be actively involved in this process, adopting a long-term perspective. If these requirements were met, the disarmament scenarios sketched out in this report would not lead to increased unemployment.

* If the conversion of existing production facilities were to prove impossible and alternative employment could not be found in the same community, some defence-industry personnel might be affected. If such consequences could not be prevented, it would be necessary to draw on the existing system of unemployment measures.

* The Swedish economy as a whole would undoubtedly benefit from disarmament. Resources released from the defence sector could be used not only to improve economic and social conditions in Sweden but also to increase international development co-operation with the Third World above and beyond the present Swedish goal of devoting 1 per cent of the GNP to development assistance.

Recommendations for Facilitating the Conversion Process

Motives

Disarmament must not under any circumstances lead to increased unemployment. Therefore the Special Expert has concluded that it is necessary to monitor closely developments within the armed forces and the defence-industrial sector in those regions and communities whose economies are heavily dependent on the defence sector. At both the national and the local levels it is important to investigate the possibilities that exist for expanding civil production within the defence firms. One other measure to be taken is to emphasize the public procurement of technology for civil markets.

A concrete programme of action should be worked out in co-operation with the defence producers. Mechanisms must also be created which would enable the progressive implementation of conversion programmes, it is important to take such actions immediately. To wait until disarmament is in progress before taking any action might cause considerable difficulties when conversion is finally attempted. As the Defence Industry Committee has emphasized, it is too late to start when defence procurement has already begun to decline.

It is up to the Government to help set the conversion process in motion as soon as possible and in a more forceful, more ogranized fashion than hitherto. The problems currently facing the Swedish defence industry, caused by declining orders, demonstrate that financial support from the Government is necessary even today. Experience has shown that conversion to civil production cannot take place overnight. It is a time-consuming and costly process. It is not unusual for new civil products to need up to ten years before becoming profitable. The Special Expert thus believes that there is every reason to intensify co-operation between state agencies and the defence industry. Institutionalized co-operation does not have to lead to unnecessary bureaucratization. Instead it should facilitate co-ordinated and well-planned actions which would promote the use of defence-sector resources for civil-sector production.

Access to financial resources should facilitate the process of restructuring the defence industry. Changes in this sector would be further facilitated by the creation of an institution which would guide and assist in the task of planning and co-ordinating conversion programmes at both national and local levels. In the view of the Special Expert, there are clear industrial and employment motives for the state to co-ordinate the restructuring of the defence-industrial sector and to provide financial assistance where needed.

The Government is also by far the largest purchaser of defence materiel and plans the acquisition of new materiel together with the defence producers. The state thus has a special responsibility for the human and technical resources which have been built up in order to produce equipment for the Swedish armed forces. The Defence Materiel Administration (Försvarets materielverk, FMV) normally provides firms with considerable advance notice of anticipated reductions in defence orders, whether these are temporary or long-term in nature. Hence, firms should be able to adapt to a smaller volume of orders. While primary responsibility for restructuring production thus rests with the firms themselves, there is good cause for the Government to help ease the conversion process.

In addition to these economic and social reasons, the Government has strong foreign-policy motives for involvement in conversion. The special characteristics of the defence companies would be even more evident if a sharp decline in defence orders occurred as a result of Government decisions on disarmament. Such an essentially political step would radically alter the economic situation of the defence-industrial sector. The Government would thus have a definite responsibility to help to resolve emerging industrial and employment problems.

The fact that Sweden actively promotes disarmament and a reallocation of world resources also means that the Swedish Government has a special responsibility to adhere to the recommendations of the United Nations. These resolutions call for Member States to analyze the socio-economic consequences of disarmament for their own societies in the same way as this study has done. The Swedish study shows that a reduction in military expenditure can release valuable resources which could be put to better use both within Sweden and in the form of development assistance to Third-World countries. It is also suggested that Sweden should be prepared to go one step further and show that by planning and implementing specific measures, defence-industry conversion can be carried out without any serious employment problems arising.

If every country possessing a sizable defence-industrial sector were to attempt to reduce the dependence of arms producers on military orders, this would certainly favourably influence attempts to set in motion a genuine process of disarmament.

Proposals

Against this background, the Special Expert proposes that the Government:

* establish a Council for Disarmament and Conversion,

* set up a central conversion fund, linked to this Council,

* promote the creation of local conversion funds within each defence company.

The proposed Council for Disarmament and Conversion should include representatives of the Cabinet Office of the Prime Minister, the Ministry for Foreign Affairs, the Ministry of Defence, the Ministry of Labour and the Ministry of Industry. Other members shoud include representatives from relevant agencies (for example, the Defence Materiel Administration, the National Industrial board, the National Labour Market Board, and the Board for Technical Development) and from local authorities, trade and industry, and central trade union organizations. A small secretariat, attached to the Cabinet Office, should be created to administer the activities of the Countil. The Council itself should meet about four times a year.

The tasks of the Council should be to:

* follow developments within the armed forces and the defence-industrial sector, especially in those regions and communities which are heavily dependent on the defence sector;

* develop a programme of action in conjunction with relevant defence and producers and unions, which would be designed to resolve conversion problems through the application of existing industrial, regional development and employment policies;

* act as administrator of the central conversion fund and allocate resources from that fund to projects promoting civil-sector production within the defence industry as well as to research projects studying issues related to disarmament and conversion.

In the view of the Special Expert, the proposed central conversion fund should be sufficiently large to enable it to play a significant role in the conversion process. To give it adequate weight and importance, the fund should, therefore, have an annual budget of some 100 million SEK ($12.5 million). This amount can be compared with the approximately 2,000 million SEK ($250 million) allocated to military-related research and development by the Government during fiscal year 1983/84.

The Special Expert proposes that the Council for Disarmament and Conversion begin its work on 1 July 1985. In addition, it is proposed that the central conversion fund should begin its operations on 1 January 1986. This would give the Council six months to prepare and set in motion its working programme.

Once disarmament is well under way, the fund might normally be financed by allocations from the savings realized through reductions in the defence budget. Before disarmament has actually begun, however, it would be necessary to devise another method of financing. Various solutions are possible.

One such possibility would be to put a surcharge on the payments made by FMV to defence producers financed from the Ministry of Defence budget. A second possible means of financing the fund in the initial stage would be for the Ministry of Industry to make special conversion payments to the defence producers. A third method would be to use money already in the budget for promoting employment policies. The fund could use this money to retrain the work force and implement other measures designed to help firms adapt to reduced defence orders. None of these three Ministries should, however, have to bear the entire financial responsibility of the central fund.

A fourth method of financing the fund would be to put a special levy on the export of war materiel. This alternative would place the financial burden of the fund on the defence producers or on the foreign purchasers of weapons. In the opinion of the Special Expert, this alternative, a levy on the export of war materiel, has considerable budgetary, political and economic advantages over the others suggested above. A levy bn war-materiel exports would create a separate source of income to cover most of the cost associated with the proposed Council and central fund.

From a political point of view this method of financing is also appropriate since the export of Swedish war materiel is, as a matter of principle, forbidden by law. The Parliamentary ban on these exports is an expression of the political opinion that the export of war materiel is not desirable. Were orders from the FMV to be sharply reduced due to disarmament, defence producers would have two alternatives: either they could compensate for reduced domestic orders by increasing exports, or they could place greater emphasis on converting defence-production facilities to civil uses. The Special Expert believes that it is desirable to promote the second alternative (conversion) by acquiring funds through a levy on the first alternative (export).

It must indeed be stressed that, in accordance with its terms of reference, one of this study's central ideas is that in a period of disarmament society ought to use valuable resources for non-defence purposes. The Special Expert does not accept the notion that Swedish defence-industry resources would be transferred from the production of military equipment for the Swedish armed forces to the production of equipment for foreign armed forces. What is more, the export of defence equipment is not a long-term solution to the problem of declining domestic orders since in a period of disarmament there would be considerable competition for export markets among the major producing countries.

There are also other reasons for preferring a levy on war-materiel exports as the method of financing the central fund. State expenditure on military-related research and development tends to strengthen the export capacity of companies to a considerable degree. This is because companies are often exempted from having to pay royalties to the state when goods are exported, even if state-financed R&D has increased export capacity. Thus tax money is used to expand the export capacity of the defence industry. Under these circumstances it does not seem unreasonable to finance the main portion of the proposed conversion fund by a levy on the export of war materiel.

At the current level of defence-related exports, it would be necessary to place the levy at 7 per cent to collect 100 million SEK ($12.5 million) annually. The Special Expert suggests, however, that the levy be set at 5 per cent of the value of sales beginning in fiscal year 1985/86. Parliament would have the right to adjust the level of the levy if that were considered necessary. The difference between the income from this levy and the desired 100 million SEK could be made up by contributions from the budget of the Ministry of Industry since a major purpose of the fund would be to support industrial policy.

In this way the burden of financing the fund would be shared by the defence industry and the Government. Since the intention is that the defence industry will apply for grants from the fund for conversion projects, companies can, in some cases, realize a net profit if more money is obtained under the grant than is paid out on the export levy. The proposed export levy would not be applicable to military equipment not classified as war materiel, for example unarmed tracked vehicles and patrol boats as well as radio-communications equipment.

Should the proposed war-materiel export levy lead to higher prices, it is possible that the volume of defence-related exports might decline somewhat. Since factors other than price - for example, conditions of financing - often affect which supplier receives a particular order, it can be assumed that the levy will not seriously influence the level of war-materiel exports. However, should exports fall off because of price increases, the Special Expert is aware that this could produce certain difficulties for those firms which chose to increase their exports in the absence of domestic orders. It is very unlikely that the present level of Swedish defence exports could be maintained if Sweden and the rest of the world began to disarm. In this situation companies should feel even more pressure to rely on conversion rather than on defence exports.

The Special Expert also believes that attempts on the part of the defence industry to increase its civil-sector activities ought to be promoted by contributions from local conversion funds situated within each defence company. It is suggested that these be financed by a state conversion supplement placed at 1 per cent of the value of contracts concluded between FMV and Swedish defence companies. This method of financing is essentially in line with what has been suggested by the Defence Industry Committee. In order for companies to recieve this supplement, however, they should be required to match its value with their own funds. The Government's contribution should come from the defence budget in view of the state's special responsibility for the defence industry. If procurement were 5 billion SEK ($625 million) annually, the maximum the state would have to pay out each year to support these local conversion funds would be 50 million SEK ($6.25 million) which represents 0.2 per cent of the total budget of the armed forces.

It is the need for local conversion funds which will determine whether they are set up within individual defence companies. If management and unions are interested in establishing such a fund, it would be best if it were administered by a joint leadership group and regulated through a negotiated agreement. This group should continually survey and discuss conversion issues of current interest. It should also decide how the fund's money could be used to support new civil-sector projects within the company.

Political Aspects

The measures proposed here may seem unnecessary since the Swedish defence sector encompasses a relatively small portion of the economy. Compared with past and present conversion in, for example, the shipbuilding and steel industries, it may seem surprising that the defence-industrial sector could not cope by itself with conversion over a 25-year period. There are, however, important reasons why the defence sector should receive special consideration.

* The 30-40,000 persons who would have to find alternative employment must not look upon disarmament as an imminent threat. Rather, they should feel that society is determined to use their competence and know-how in other, more productive activities.

* The defence-industrial sector must not be allowed to find itself in as difficult a conversion situation as the Swedish shipyards did. The Government can avoid having to present the taxpayer with a multi-billion crown bill for defence-industry conversion by engaging in advance, long-term planning with the defence firms. Even if Governmental policy in general favours a reduction in subsidies to trade and industry, sufficient justification exists for the creation of a special conversion fund. If a strong effort is made to develop civil-sector production with the assistance of financing from the conversion fund, the defence industry need not threaten or be forced to release workers as orders for military materiel decline.

* Sweden's experience of conversion shows that the unions have played an important role in instigating change. The Special Expert has been able to observe that there are many ideas and suggestions for civil projects in the defence sector which ought to be exploited. The shipyards' decision to produce oil-rigs and the diversification of the aerospace industry into the civil sector - both of which have proven to be profitable over the long-term - owe much to strong pressure from the unions. There is thus reason to promote such initiatives through the measures proposed here in order to create new employment in technologically advanced civil-sector production. There is also good reason to assume that the unions would participate actively in the implementation of these measures.

* Finally, but not least important, Sweden should adopt specific measures in order to fulfil the United Nations disarmament recommendations since disarmament is an area in which Sweden has long been active diplomatically. This would give increased strength and credibility to Sweden's activities in this area. The Swedish model proposed here to faciliate disarmament-induced conversion is probably not well suited either to the superpowers or to other countries with very large defence-industrial sectors. Nonetheless, if these proposals were realized, it could show the international community how a country such as Sweden can guard against the uncertainty which afflicts defence-industry employees as defence orders decline and how it can do so with relatively small financial outlays. By showing that disarmament does not threaten jobs but, on the contrary, promotes the well-being of the economy by a better use of human and material resources, Sweden can help to increase and broaden international support for disarmament.

Recommendations Concerning the Relationship between Disarmament and Third World Development

As was shown both in the UN Report on the Relationship between Disarmament and Development and in this report, it is important, particularly for political reasons, to attempt to connect disarmament and development by transferring resources from the global military sector to development assistance. This would create more favourable conditions for the promotion of development in the poorest parts of the world and for the attainment of a more just distribution of the world's resources.

The Special Expert believes that the establishment of such a link would be facilitated by the creation of an International Disarmament Fund for Development within the UN system. An international conference under the auspices of the United Nations which would discuss a global, integrated view of disarmament and development questions would also, according to the Special Expert, be beneficial. Such a conference could help to create greater understanding of the need to devote more resources to development co-operation with the Third World.

The Special Expert recommends that Sweden declare itself prepared to contribute annually to an International Disarmament Fund for Development if such a fund were set up. This contribution, which in the long term should be financed through savings from the defence budget, could be channeled through Sweden's grant for multilateral development assistance. This money should be considered as an extra grant, over and above the aid which Sweden provides to developing countries within the framework of the 1 per cent-of-GNP development assistance goal or any higher target which may subsequently be adopted. This grant must not imply any retreat from present Swedish development co-operation princiles, such as the requirement that as large a proportion of total aid as possible take the form of untied aid. The needs and priorities of the developing countries should determine how resources will be allocated.

Sweden can also help to integrate the disarmament-development relationship into the ordinary programmes and activities of the various UN agencies. The Special Expert believes that this can be done by instructing Swedish delegates to attempt to place this topic on the agendas of the Boards of these agencies.

The Special Expert also believes that Sweden can act bilaterally by promoting the increased transfer of resources to developing countries in the event of disarmament. The 1981 UN Report showed that the developing countries need to import items such as mining and water-power equipment, agricultural machinery, and medical apparatus. A significant portion of the manufacturing resources currently used to produce defence materiel could be converted to the production of these kinds of civil equipment. Were the global economic situation to improve, many developing countries would become important customers who would be able to purchase such equipment on commercial terms.

The Special Expert therefore considers that there are good reasons for Sweden and other countries with sizable defence-industrial sectors to begin to examine which types of technical knowledge and skills are available in the defence companies. A survey of existing technical capabilities ought to produce a list of technologies corresponding to the potential needs of the developing countries. Such a list could be drawn up under the leadership of the proposed Council for Disarmament and Conversion in close co-operation with agencies such as the Swedish International Development Authority (SIDA) and the Swedish Commission for Technical Co-operation (BITS).

Recommendations Concerning the Improvement of the Collection of Data on the Swedish Defence Industry

To enable evaluation of developments within the defence-industrial sector, the Secretariat assisting the Special Expert carried out a survey of the major Swedish defence producers. Information on employment, sales, and value-added was sought. To a large extent, this effort involved up-dating statistics collected by the Defence Industry Committee for its 1980 report. One problem which confronted the Secretariat in this respect was that in many cases it was impossible to obtain information for 1980, 1981 and 1982. Collecting and analyzing the data obtained was also very time-consuming.

The Special Expert also obtained data on defence-related research and development from the Central Bureau of Statistics (SCB). These data are not, however, entirely satisfactory. For example, no attempt is made by SCB to analyze or reconcile deviations - some of which were significant - between the R&D data collected by the SCB and the R&D data provided by firms for other purposes. The figures on R&D expenditure by companies presented by the SCB to the Special Expert were not in such a form that they could readily be compared with the SCB's own industrial statistics on value-added and the like. In order to evaluate the contribution of military-related R&D to economic growth, for example, it was necessary for the Secretariat to spend considerable time both collecting and organizing defence-sector R&D data so that they could be used in conjunction with existing industrial statistics.

As already mentioned, statistics are available either for firms as a whole or, as is the case with the SCB's industrial statistics, for specific establishments. It is often the case, however, that military and civil production are carried out side by side at a single establishment. Available statistics are thus not always very useful for analyzing the differences in conditions that may exist between military and civil industrial production. Given the fact that the FMV's auditors have access to internal company accounts, it ought to be possible to obtain data which would enable more accurate analyses to be carried out.

In view of the shortcomings in existing data which have been noted in this report, the Special Expert recommends that the Government set in motion a study designed to evaluate the need of all Governmental agencies for access to current statistics on the defence-industrial sector. It seems reasonable that such a study be carried out under the auspices of the proposed Council for Disarmament and Conversion. The study should suggest means of collecting statistics on defence-industry employment, sales, value-added, R&D expenditures and other relevant information on an annual basis. In co-operation with the SCB, the study could examine the SCB's defence-related R&D statistics with a view to making them comparable to the SCB's own industrial statistics. It should also consider ways in which the SCB's statistics could differentiate between civil and military production within individual establishments and companies.